

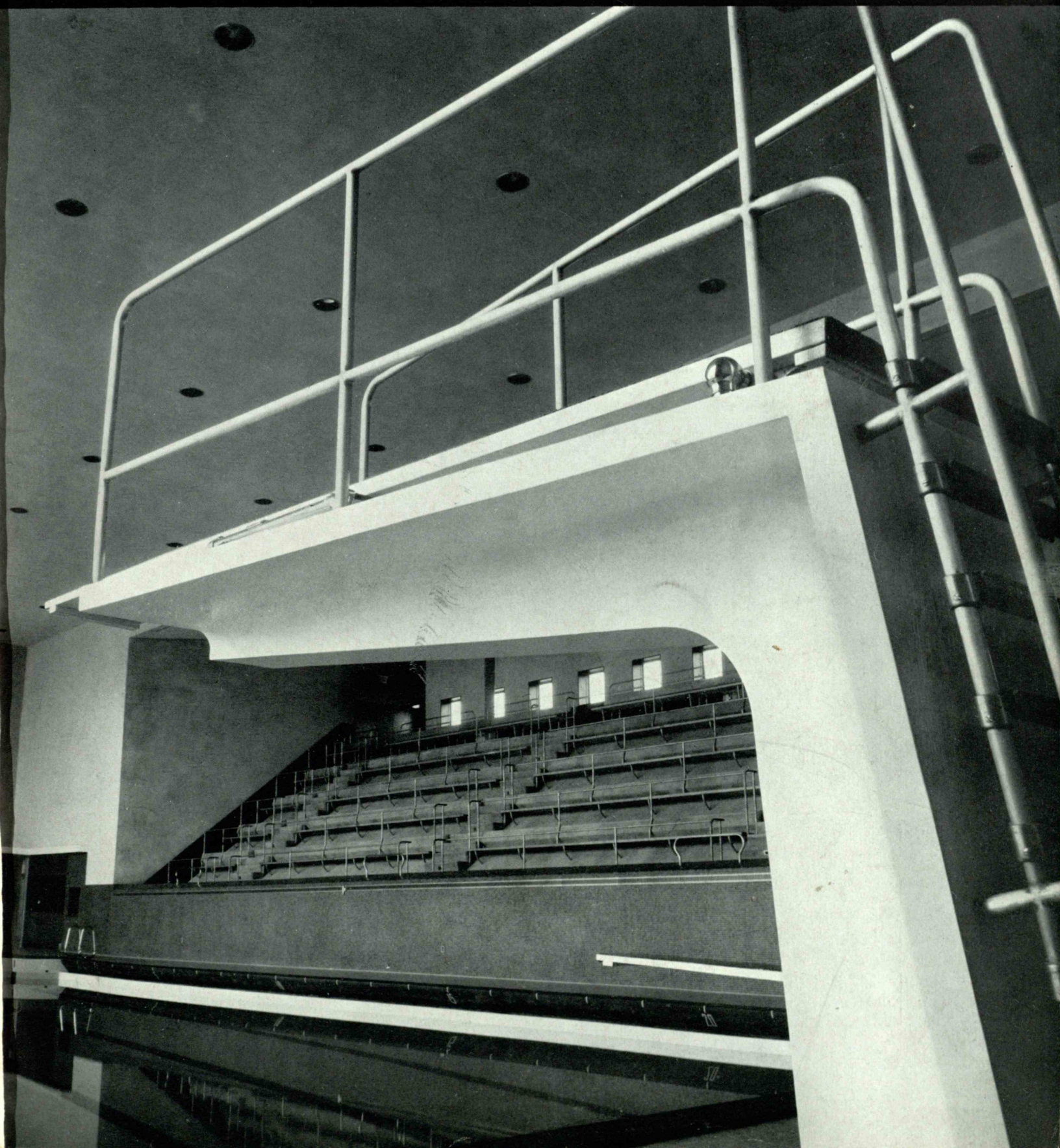
November 1940

TECHNOLOGY

REVIEW

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Blue



technology review

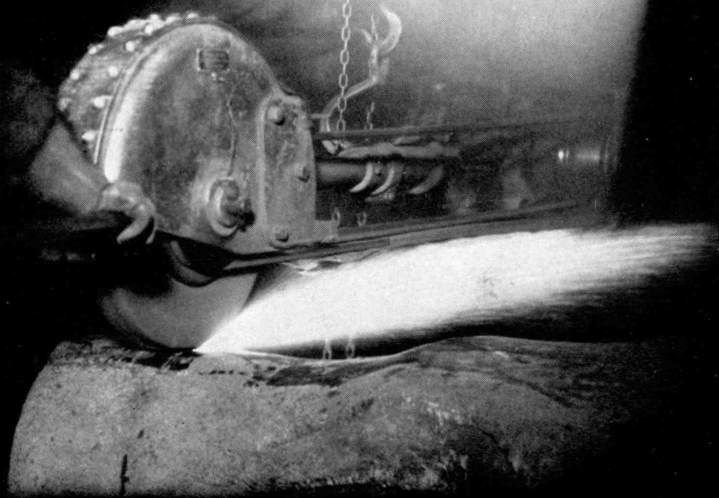
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THE TABULAR VIEW

Plunge.— Entering upon a new year and a new volume, The Review this month appropriately wears on its cover a photograph of the cantilevered diving tower which is one of the many admired features of the Alumni Pool, available to students this fall through the co-operation of Alumni with Technology.

Pointer.— The contents of The Review, beginning with this issue, are to be indexed each month in the "Industrial Arts Index," familiar to users of libraries. The Review's own annual index will appear as usual at the close of Volume 43 next summer. Copies of the index to Volume 42 may be had on request.

Horizontal Man.— What is the real task which an architect undertakes when he traps a chunk of infinity for other men to use? Answers to this question are as diverse, naturally, as men's minds; few would be recognized, however, as possessing greater authority than that made on page 14 by ALVAR AALTO, the distinguished Finnish architect who this fall joined the Institute staff as research professor in architecture. Professor Aalto has earlier expressed in noted buildings the humanistic ideas of construction which he discusses in this issue of The Review.

Height-to-Paper.— That invention is usually the result of a cumulative process requires little argument. It is supported by consideration of the technological background of Johannes Gutenberg's invention, five centuries ago, of printing with movable types, described for The Review (page 17) by DOUGLAS C. McMURTRIE, '10. Typophile and author, Mr. McMurtrie is director of typography for the Ludlow Typograph Company and chairman of the invention of printing anniversary committee of the International Association of Printing House Craftsmen.

Fortified Flour.— In war, food for soldier and civilian alike offers special problems, to the discussion of which (page 20) JAMES A. TOBEY, '15, brings specialized knowledge. He is director of nutrition of the American Institute of Baking and lieutenant colonel in the Sanitary Corps Reserve, United States Army. Lecturer in public health law at the Institute, from which he received the doctorate of public health in 1927, and at the Harvard University School of Public Health, Dr. Tobey is author of a number of books and is a frequent contributor to magazines.

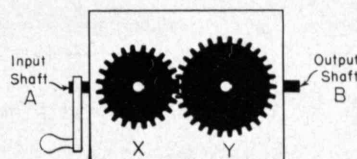
Louder.— Acoustically speaking, some auditoriums were never meant for speaking. Why, is a matter of reverberation time, absorption, and other physical questions, ably explained (page 22) by PHILIP M. MORSE, Professor of Physics at Technology, student of acoustics, Editorial Associate of, and among the most stimulating contributors to, The Review.

Write Right.— A reasonably frequent diversion of all who have to do with writing for print is arguing about how to do so. The Review Editors are no exception; out of a fairly harmonious symposium they settled lately on a few conclusions (page 24).

No. 28

Just for Fun! A CHALLENGE TO YOUR INGENUITY

A SHORT side-trip from our regular work led to the following odd puzzle.— The diagram represents a box from which two keyed shafts project toward the reader. With gears *X*, *Y* on these shafts as shown, there

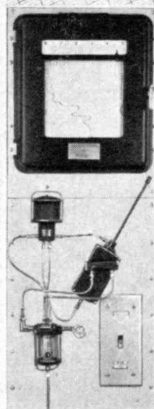


is a true drive connection between input shaft *A* and output shaft *B*, but if the gears are interchanged, shafts *A* and *B* can be turned independently. The box contains nothing but ordinary gears, shafts, and bearings. What is the mechanism? [See next issue for answer.]

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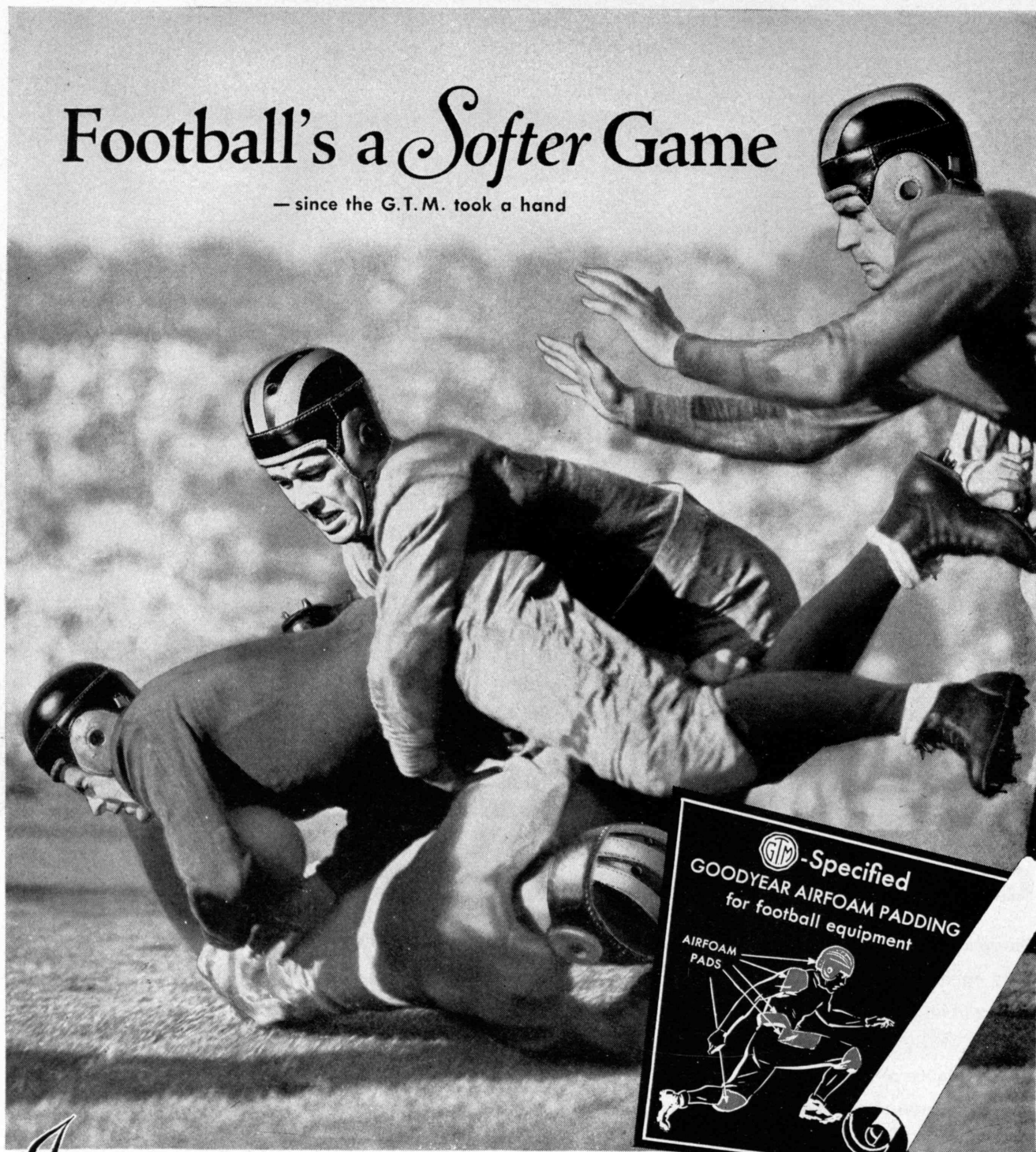
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structure makes Airfoam-padded gear cooler, lighter, less wearing on the boys. First adopted by a leading midwest university last year, Airfoam quickly proved its superior advantages in protecting tackler as well as tacklee. Elsewhere, too, Airfoam is being specified by the G. T. M. with great success — in invalid equipment, seed-sorting machines and other novel uses demanding exceptional cushion.

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Fall

Paul J. Wool

VOLUME 43

NUMBER 1

THE TECHNOLOGY REVIEW

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AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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From a photograph by Richard Pope, M.I.T. Photo Service

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As the war in Europe trends eastward, the contrasts enforced by industrial and economic needs of the Western civilization are highlighted. This Kurdish tribesman in traditional dress is on guard duty before a modern woven-wire fence at an oil well in Iraq.

THE TECHNOLOGY REVIEW

Vol. 43, No. 1



November, 1940

The Trend of Affairs

Pattern for Tomorrow

IF there is one continuous and tightly woven thread in the tapestry of history, it is that war brings fundamental changes — political, economic, technical — in everything its bloody finger touches. Modern warfare, with its emphasis on the destruction of industrial centers, the paralysis of a nation's nerve centers, the attempt to crush civilian morale through incessant bombing, holds implications which are revolutionary.

As *The Review* commented in an article in this section last January, one of the most compelling lessons which Europe's experience holds for us, or for any highly industrialized nation attacked by another power, is that the centralization which has been a keystone in building industrial efficiency must be replaced by decentralization, even though that may frequently entail considerable loss of efficiency. It is simply a case of a bird in the bush being worth two in the city. Efficiency must be sacrificed for safety, for continuity of production.

The problems to be considered in any mass dispersion of industry in this country — not only the removal of the physical plants themselves and their complete redesign but the problems of transport, employee migration, power, and a host of others — are obviously enormous. Bluntly, their solution calls for nothing short of a new epoch in city and regional planning, as well as new thinking on the part of architects. The latter must now consider not only form and beauty, efficiency and function, but also the legerdemain of camouflage and the strategy of concealment. The era of glass and light, of shining metal and geometrical precision and rich dark shadows, so young and so promising, must give way to that of drab daubs and leafy foliage. What figure industrial plants cut from the ground is not important; the important thing is what figure they do not cut from the air.

Just how vital this bird's-eye planning is in industrial design is the subject of a very practical article by Konrad F. Wittman in the *Architectural Record* for September. Widespread decentralization is imperative for reduction of risk. Planning for protection must, therefore, begin at the sites of plants. Railway junctions and highway crossings are important targets in war; hence they offer poor sites for factories despite the advantages of their proximity under normal conditions of operation. Plant security must be paramount. Powerhouses and water supplies must be far removed.

But there are definite postulates for the design of these scattered plants as well. There must be no narrow courts, no narrow streets, but ample open space between buildings. Considering the effects of explosions, the author shows that square buildings expose less wall surface in proportion to floor space; round buildings theoretically expose the least. Low buildings are preferable because they offer less resistance to air pressure than do buildings of many stories. In explosions, structural frames are less likely to collapse than are walls of solid brick. Windows must be angled to avoid reflecting light.

So much for design; what it cannot accomplish must be perfected by skillful camouflage. Buildings whose geometrical shapes throw straight shadows are easily spotted, and Mr. Wittman suggests that irregular curves be used to distort these shadows. Roofs must be hidden behind drab paint or even beneath turf, shrubs, and small trees, which disguise them as peaceful lawns and gardens. Strips of cloth and leaf-covered nets have their uses. Often the natural environment in which a plant is located helps with the deception if the buildings are skillfully blended with their surroundings. Even an artificial fog can conceal the contents of a valley. Underground shelters, extra power plants, even entire spare factories, and fire-fighting equipment are, of course,

routine essentials. The author makes no prognostication. "We are now at the beginning of this development," he declares, "and we cannot yet foresee how it will change the face of our cities and of our country. The alterations may be manifold and radical."



H. B. Kane, '24

Rana catesbeiana — the common bullfrog — with the aid of the Edgerton high-speed lamp here demonstrates a sharp difference between human and batrachian diving as he flies through the air with his Popeye forearms crooked. As he enters his puddle, his legs are already drawn up for the first thrust. This fellow is a male, indicated by the fact that his ear disk is larger than his eye. His eye seems duller in the second picture because his nictitating membrane, or third eyelid, has closed to protect the eye during his travel.

Not Dead Fish

CONFECTION and conversion of coals and crudes have been busying Carnegie Institute of Technology researchers, recent reports of whose work suggest interesting complementary relationships. Ernst Berl has been making crude oil, bituminous coals, asphalts, and coke in his laboratory from such materials as corn, wood, seaweed, leaves, and molasses — all of which are substances rich in carbohydrates — by heating them under pressure with limestone. The process cannot compete in price with crude oil from the ground but is said to be cheaper than making gasoline from coal by hydrogenation, and is of much scientific if not immediate technological interest.

Meanwhile, rather than make coal from farm produce, other investigators at Carnegie have patented a new way of making liquid organic chemicals from coal. In this process, details about which are not as yet sufficient to differentiate it sharply from the Bergius method of some twenty-five years ago, powdered coal reacts under pressure with hydrogen gas in the presence of a catalyst, such as copper oxide, giving sulphur-free oils which subsequently are treated again with hydrogen under pressure, with a nickel catalyst. Recovery of 80 per cent of the coal in the form of organic liquid hydrocarbons is reported accomplished by the method. The chemicals may be used in synthesis of dyes, explosives, and medicines.

This conversion process liberates hydrocarbons compacted into coal by the long labor of nature on vegetable matter that flourished in an earlier age. Dr. Berl's

process — in its crude-oil aspect particularly — performs the conversion by a more direct route and is declared to demonstrate that lignin, the woody skeleton of trees, is not the main source of coal formed in nature. The plant carbohydrates, Dr. Berl asserts, were the raw material of coal thus formed; and asphalts, not dead fish, the raw material of crude oil.

Cast Iron Gets Tough

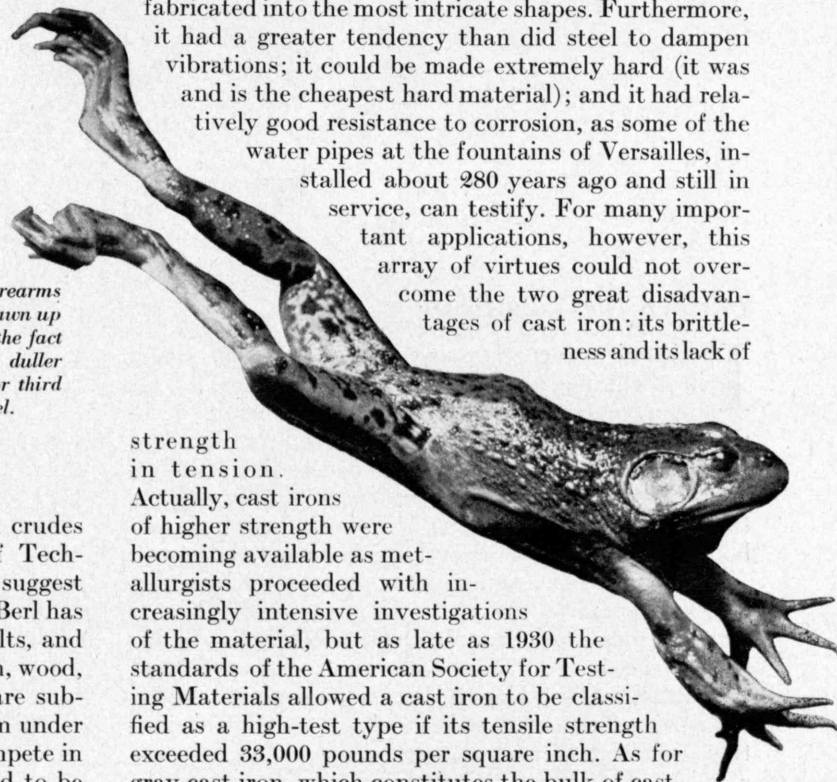
UP to the middle 1920's the cast iron of commerce was what it had always been, a material fit in general for the more plebeian tasks of industry, the jobs where severe shocks and heavy stresses — particularly tensile stresses — were not factors. Cast iron was cheap, readily available (foundries are everywhere), and easily fabricated into the most intricate shapes. Furthermore, it had a greater tendency than did steel to dampen vibrations; it could be made extremely hard (it was and is the cheapest hard material); and it had relatively good resistance to corrosion, as some of the water pipes at the fountains of Versailles, installed about 280 years ago and still in service, can testify. For many important applications, however, this array of virtues could not overcome the two great disadvantages of cast iron: its brittleness and its lack of

strength in tension.

Actually, cast irons of higher strength were becoming available as metallurgists proceeded with increasingly intensive investigations of the material, but as late as 1930 the standards of the American Society for Testing Materials allowed a cast iron to be classified as a high-test type if its tensile strength exceeded 33,000 pounds per square inch. As for gray cast iron, which constitutes the bulk of castings, strengths of 18,000 to 24,000 psi in tension were sufficient to meet the specification. In 1936, however, the standards blossomed out with classes of gray iron ranging in tensile strengths from 20,000 to 60,000 psi. Special alloy cast irons, called variously high-test, high-strength, and super cast irons, give tensile strengths up to 100,000 psi in the heat-treated condition; mild steels give from 50,000 to 70,000 psi.

The manner in which this rapid renaissance has occurred tends to confirm the view that cast iron is simply a steel matrix acting exactly like any other steel of similar composition, in which are imbedded a multitude of small graphite flakes that lower the strength of the iron by interrupting its continuity but also give it excellent bearing qualities and machinability. For a given hardness, cast iron usually machines faster than steel.

Foundrymen have learned that considerable improvements in the properties of cast iron can be had if they merely juggle their present variables — i.e., if they select



raw materials with care, maintain temperatures at optimum levels, and, above all, adjust the silicon-carbon ratio. The presence of silicon in cast iron reduces the amount of carbon which the iron can hold in combined form. Thus more carbon is precipitated in the form of weakening graphite flakes and less is held as hard and brittle iron carbides. Foundrymen therefore lower the silicon content of their irons, but not to the point where the rise in the combined carbon content begins to produce excessively brittle and hard castings. They also find it desirable to introduce part of the silicon after the iron is melted and ready for pouring; such late silicon appears to produce graphite flakes that are relatively small and uniformly distributed.

Likewise an orthodox approach has been the use of alloying elements, the most important ones being nickel, chromium, molybdenum, and vanadium. Used singly or in combination, these alloys give sounder, tougher, stronger products which in machinability equal or excel straight cast irons of equal hardness. Alloyed cast iron is also less sensitive to changes in section, giving substantially the same strength in thick walls (which cool slowly) as in thin ones, a characteristic which ordinary cast iron most decidedly does not possess.

The latest trend in the production of iron castings, and the most surprising one to the foundryman of a generation, ago is heat-treatment. Not so long ago, cast iron was considered about as appropriate a metal for tempering and quenching as was copper or lead; yet service records are being set daily by parts which owe to proper quenching or tempering perhaps an additional 20,000 psi of tensile strength or a fine-grained, hard, and wear-resisting structure. Particularly noteworthy is the development of the interrupted hot quench, in which the hot casting is quenched not in a liquid at room temperature but in a salt bath at 500 to 700 degrees Fahrenheit. The treatment results in a hard, tough structure which tends to get harder as it is battered in service and which shows unusual resistance to sliding or rubbing wear. To obtain equivalent surface resistance without this heat-treatment would require a considerably higher percentage of alloying elements. These factors — improved processing, alloys, and heat-treatment, coupled with the inherently good resistance of cast iron to repeated stress and to the so-called notch effect,

have greatly aided this ancient metal in holding its own against new steel and light metal alloys. In fact, high-strength cast irons have invaded some fields,

such as crank- and camshafts for internal-combustion engines, which were formerly the province of forged steels. Higher alloyed cast irons have also lowered the cost of performing some of the most brutally severe tasks of industry, such as pulverizing ores in the mining trades; pumping sand, ashes, and concrete; and handling concentrated acids and alkalis in the heavy chemical industries. Like wood and the copper alloys, two other old materials of construction, cast iron is showing plenty of ability to keep up with the technical times.

Casein Casques

MILK may cover the heads of a million and a half Americans during the next year because Europe's rabbits are escaping export as Europe's hunters are mustered or mastered. Exports of rabbit and cony from Belgium, Czechoslovakia, and Poland vanishing, American hatters are reported looking with a kindly eye on the possibilities of felt made from casein wool. From a half million to a million pounds of casein fiber are expected to be used in hat manufacture during the next year.

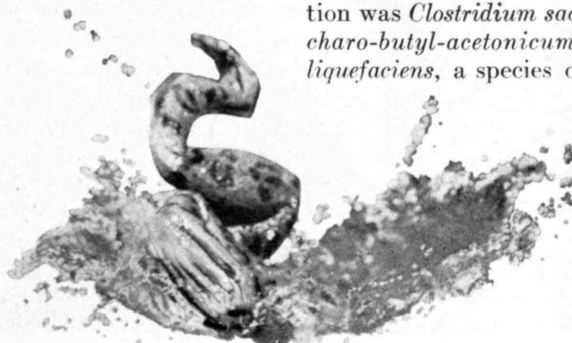
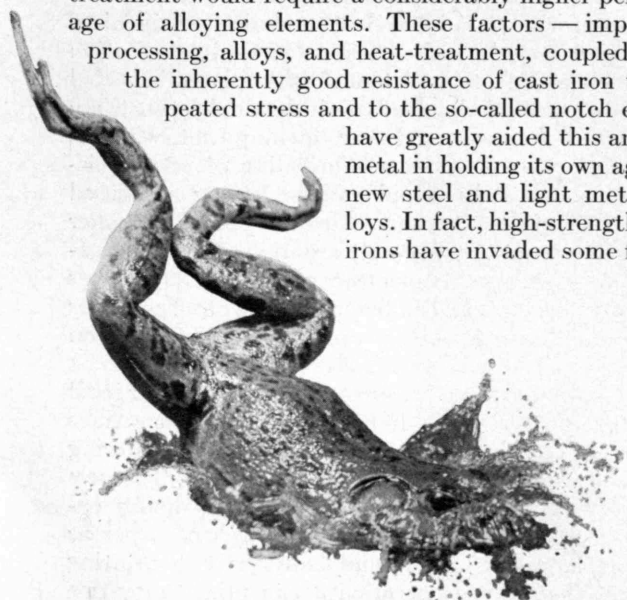
In the five years since processes were developed for the conversion of casein into a synthetic wool, American interest in the substance has been somewhat lackadaisical, in part because the fibers lacked resilience and did not felt readily, in part because the United States usually has no serious wool shortage, in part because experimentation with rayon and glass textiles engaged chief attention. The hatters' present resort to the synthetic is regarded as experiment purely; only about 3 per cent of total United States hat production is involved.

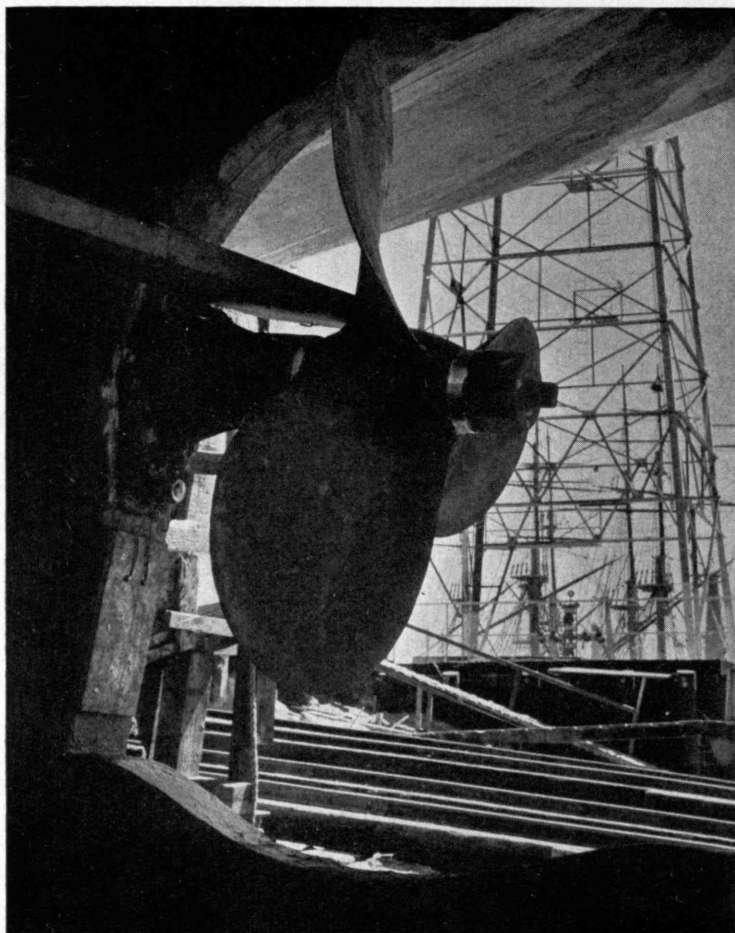
Nevertheless, milk producers, embarrassed by yearly accumulation of skim milk, less than 5 per cent of which now goes into casein for plastics, glue, and so on, will look on the hatters' experiment with hopefulness. Success might spur the utilization of casein as felt or yarn in other big markets. To make a synthetic wool dress, the casein from thirty quarts of milk is needed.

Not Patentable

YOU may patent a motor-driven fan to blow the foam off beer, and you may patent a woman's shoe with a jack in the heel to raise or lower it — people have done so. But you may not patent a bacterium, even under the terms of the Plant Patent Act of 1930; bacteria are not "plants" in the sense in which Congress used the term. Sustaining the Patent Office's rejection of an application for such a patent, the Court of Customs and Patent Appeals has so ruled. Basis of the litigation was *Clostridium saccharo-butyl-aceticum-liquefaciens*, a species of

Clostridium saccharo-butyl-aceticum-liquefaciens, a species of





Cy La Tour and Son from Petroleum World

A Hollywood square-rigger and an oil well derrick are storytelling background for the propeller of a vessel in drydock at Long Beach, Calif.

sugar-fermenting bacteria useful for producing the neutral solvents butyl alcohol, acetone, and ethyl alcohol from suitable mash. Cultured from Louisianian cane field soil, these bacteria are described as being superior to other previously known species in that the fermentation process utilizing them takes less time and gives greater yields of solvents. A patent covering the process has issued.

Recognizing that bacteria are regarded as plants scientifically, the court reasoned that the Plant Patent Act does not include them because in it the term plant is used in the popular sense. "A drop of water may contain thousands of bacteria," said the court, "but outside of scientific circles a drop of water would not be regarded as containing thousands of plants." The act provides, moreover, that plant patents may be issued to those who discover or invent a new variety of plant other than a tuber-propagated plant and asexually reproduce it by grafting, budding, cutting, layering, division, and the like. Bacteria did not seem to the examiner or to the court capable of being so treated.

The work done by the bacterium whose unpatentability has thus been determined is of historical importance. Some twenty years ago, Chaim Weizmann found a way of utilizing a species of bacteria to produce butyl alcohol and acetone from starch or cereal mash. Both Great Britain and the United States employed that *Clostridium*

in the production of war materials during the World War. During litigation over the Weizmann process, it was held in this country that a patent on the technique was valid despite the argument that it involved the life process of a living organism. "Were the patent for a bacteria per se," the court then held, "a different situation would be presented." That different situation found its answer in the refusal to consider the sugar-fermenting bacterium patentable.

Mixed Grill

RECALLING the legend of the lady who wanted to build her own house but could not drive nails successfully and hence fastened the structure together with hooks and eyes, comes announcement of beginning of production of small house "assemblies" on a new structural system which uses no nails, relying instead on bolts, angle braces, and wedge locks for the frame, on hooks and concealed clips for exterior enclosing units and interior surfaces. The system, in development for some ten years, is an improved beam-joist-and-stud type of construction. Emphasized is the fact that it permits the expansion or alteration of a building with minimum effort and time. Removal of a section of wall and attachment of a room completely finished and ready for use can be done in less than five hours, according to the designer. Plywood, light-gauge steel stampings, and pre-cut kiln-dried lumber are utilized in the standardized structural units of the system; erection of the houses is an assembly operation only, for cutting and fitting are eliminated. A five-room

house, fully equipped, is expected to cost about \$3,000.

❑ Ethylene, the unsaturated gaseous hydrocarbon which, as an anesthetic, aids the surgeon and, as a constituent of coal gas, infuriates the householder, may harass the unwary florist if he places cut flowers in storage rooms where apples and other fruits are ripening. Investigators at the United States Horticultural Station in Beltsville, Md., find that cut flowers placed in sealed containers with ethylene suffer injuries duplicating those received by flowers stored near ripening fruit, which is known to give off ethylene. Shriveling of petals, discoloration, and early dropping of the flowers are caused by the presence of the gas and are speeded up at higher storage temperatures. For cut carnations, the investigators report storage temperatures of 34 to 36 degrees Fahrenheit as best. ❑ Rubber makes the printing plates of a new high-speed rotary press, built to print books on paper fed to it from a continuous roll rather than from a pile of individual sheets. Greater speed in the actual printing, greater speed and economy in preparations before printing, as well as saving in the cost of storing plates are cited as advantages of the process. The new press — first ever constructed for printing books entirely from rubber plates — carries a roll of paper as wide as forty-five inches and contains two printing units, so that at one operation it can print thirty-two pages of standard book size on each side of the paper.

For rubber-plate printing, type is first set in the usual way; from it a rubber-plate matrix is made; and from that, rubber plates of the pages are molded. The flexible plates are fastened readily to the cylinders of the press.

¶ Rubber is not, however, without rivals for the prize of supplanting metals as the medium which carries ink to paper. Printing plates made of a phenol-resin plastic are announced as going into production and as being suitable for line-cut, half-tone, tabular, and straight text matter. In cost, they are predicted to range from 33 to 55 per cent less than similar electrotype plates. Unusual strength and hardness are cited as among their virtues.

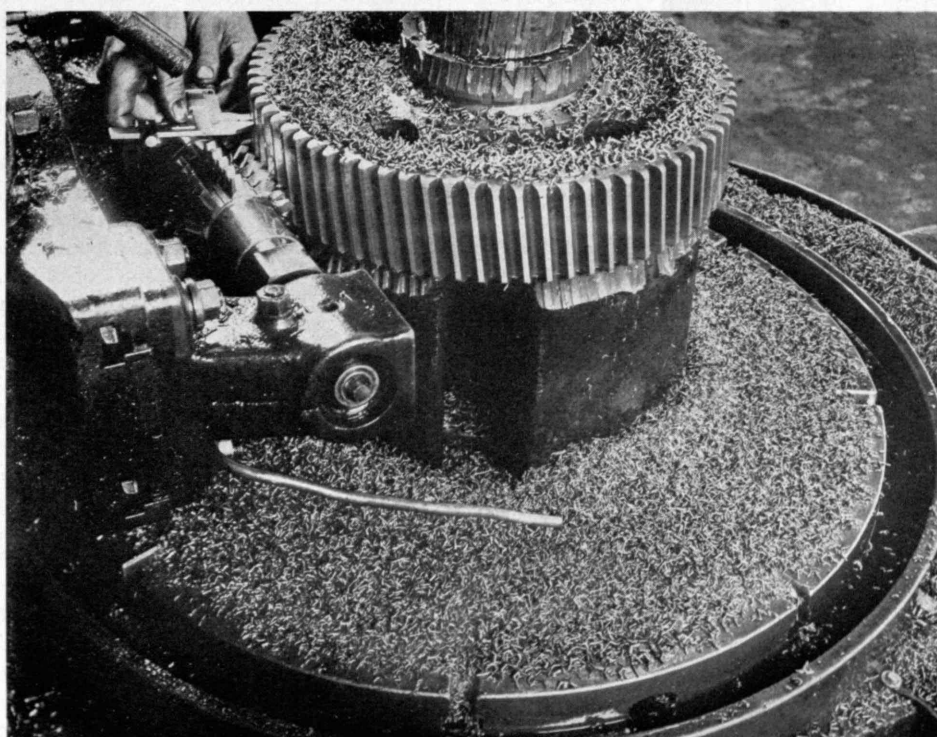
A run of six million impressions of bowling score sheets is reported to have left a set of plastic plates in apparently as good condition as when they first went on the press. Their light weight offers great advantage in the storing and shipping of the plastic plates.

¶ The versatile plastics have put in another appearance as well, in a bowling ball which, through the combination of synthetics with rubber and with manufacturing equipment designed for accuracy, is held to diameters exact to a two-thousandth of an inch. ¶ University of Oklahoma chemists are interested in the possible exploitation of the *bois d'arc*, the native Oklahoman tree more usually known as the Osage orange. Its wood yields 15 per cent of its weight in dye suitable for use on leather and textiles, and its fruit, properly dried to remove poison present during the green stage, can be utilized as cattle feed. Growing to a height of 25 feet and a trunk diameter of 7.4 inches in thirteen years, the *bois d'arc* might offer possibilities similar to those provided some southern states by quick-growing pine. ¶ Schools' reopening brings resumption of the biggest human haulage; more than eight billion passenger-miles were traveled last year by pupils in the more than 42,500 school busses in operation in the United States. The daily passenger load totals 3,742,000. One school child in every eight uses the school bus, for an average round trip of eleven miles each day for 200 days.

¶ A drop in price of almost 99 per cent in two years — from forty dollars to fifty-five cents a pound — is reported for melamine, a cyanamide product which is the raw material of a new group of resins used in plastics and paints. Industrial production on a tonnage basis, which has taken place during the past two years following a century of sporadic investigation since Von Liebig first synthesized and named the substance, is the cause. ¶ In response to a questionnaire, television viewers have lately told W2XWV that they

prefer a six-hour television day, want more news programs, especially of sports. Boxing led in their preference among sports; newsreels in their preference among film entertainment. Fifty-eight per cent of those responding favored short programs. Dealers, tavern owners, restaurateurs, and owners of television receivers in metropolitan New York and its environs were queried.

¶ Designs in color are printed photographically on fabric by a recently announced process which calls for the impregnation of the material with the colorless, or leuco, form of the dye and its subsequent exposure to light transmitted through a negative carrying the design to be dyed on the cloth. The colorless dye regains its color and becomes insoluble under the action of the light; the dye in portions unexposed remains colorless and soluble and is later washed out, leaving on the fabric an insoluble colored print of the design. ¶ Supplementing mulberry leaves — the preferred food of the silkworm — with other foods, investigators have found that concentrated soya-bean milk appears beneficial to the worms. Mortality of larvae and pupae was decreased and weight of silk produced was increased for worms fed on leaves covered with the concentrate. Beef extract as a supplementary food was accompanied by increase in weight of silk but also by increase in mortality as against that of controls fed on mulberry leaves alone. ¶ More than 100,000,000 trees are now growing in the 17,000 standard streamline shelter belts designed to hold the topsoil where it belongs in dry midwestern states. Four or five varieties of trees are used in a single belt. In Oklahoma, in plantings now five years old, the tallest trees have reached heights of forty feet. The present top in Nebraska is about twenty-five feet. A properly streamlined belt is expected to lift the prevailing wind up and over fields to the leeward for an effective distance twenty times the height of the tallest tree.



A pause to check accuracy of the progress from blank to gear

Westinghouse

Partial effectiveness extends for fifty times that height.

¶ A conveyor belt nine and a half miles long, said to be the longest ever built, is to transport the 10,400,000 tons of material to be used in construction of Shasta Dam on the Sacramento River in California. The conveyor belt is thirty-six inches wide and rolls on 16,000 idlers. The trip from the loading point to the discharge station at the end of the conveyor line requires one hour and forty minutes. ¶ Synthetic vitamin E has come actively on the market, after a test period during which its effectiveness as compared with that of the natural product was studied. Crude wheat germ oil is the best-known natural source of vitamin E, discovery of which is generally attributed to Professor H. M. Evans of the University of California. Chief application for vitamin E therapy is in the treatment of amyotrophic lateral sclerosis, commonly known as Gehrig disease — the slow insidious disease of the spinal cord

which hurts nervous function and causes progressive weakening and slowing of muscles through lack of proper nervous control. ¶ At least one living creature would take no interest in announcement of the synthesis of a vitamin; the ordinary cockroach, investigators have found, needs no vitamin A in its diet. Its body can function normally without this vitamin throughout life. ¶ Glass building blocks — “bricks” in usual terminology — filled with a gas that becomes luminous when an electric current passes through it are a recent development. Coating the inside of the bricks with a material that will glow in the presence of ultraviolet rays generated by the electrically excited gas is suggested as a means of increasing the illumination to be had from them. Since internal pressure is quite low, the inventor maintains, the individual blocks will serve as very good heat insulators.

Oil and Electricity

INJECTIONS of a germicide into electric cables in underground electric power-transmission and distribution systems are a speculative possibility in the light of results thus far secured in a long research program which is directed by Jayson C. Balsbaugh, '24, Associate Professor of Electric Power Production and Distribution at Technology. The idea of “medical” men giving the cables a shot in the arm at intervals is suggested by the fact that the troublesome oxidation of



M.I.T. Photo

Atoms being burned in an arc just before their introduction into the field of a specially designed magnet in the M.I.T. Spectroscopy Laboratory. This study of the Zeeman effect — splitting of spectrum lines by a magnetic field — is being done in connection with further research into the spectra of the elements which is under the direction of Professor George R. Harrison.

mineral oil used as insulation in electric lines may possibly be assisted by micro-organisms which were in the insulation originally and were tough enough to survive the high temperatures and other processing conditions to which the component parts of the insulation were subjected in the manufacture of the cable.

This is but one of the varied developments that have marked Professor Balsbaugh's study of the deterioration of mineral oil when applied to electrical uses. In this research program, which began about five years ago, the co-operation of power companies has been augmented by the support of electrical and oil manufacturers and processors; other Departments of the Institute have been called upon more and more as ramifications of the problem have become clearer; and unsuspected applications have developed for the instruments and techniques which had to be designed and built in order to meet the primary purpose of the program. At present, the Engineering Foundation, the American Institute of Electrical Engineers, over a dozen power companies, a half-dozen oil companies, and an organization representing a group of electrical manufacturing companies are co-operating in the study, on which Alvin H. Howell, '38, Annis G. Assaf, '37, William C. Hollibaugh, and Wesley W. Pendleton, '40, are associated with Professor Balsbaugh.

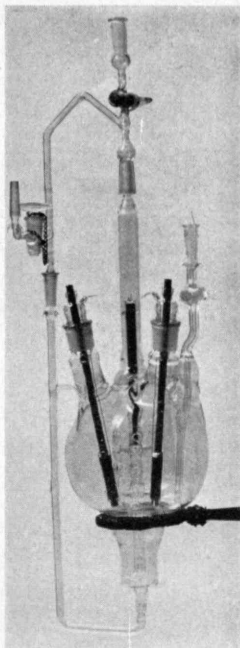
The importance of the basic problem may be gauged from the fact that some two billion dollars' worth of electrical equipment depends for satisfactory operation

upon mineral oil. Though the actual dollar value of the oil itself is comparatively slight, its economic importance hence is very great. Mineral oil is used in oil-impregnated paper-insulated cables, in transformers, in switches, and in other electrical apparatus for its insulating and other properties. It consists principally of hydrocarbons, in themselves inherently insulators. One of the important foes to its efficiency is oxidation, for the oxidation products, such as acids, water, and so on, are conducting and chemically active and thus set partly at naught the purpose for which the oil is used. To reduce as far as practicable the effect of oxidation, the processors of the component materials, the manufacturer of the cable, and the utility company in installation give due consideration to such factors as selection of materials; elimination of contaminants in the oil and paper by refining, purification, evacuation, drying, and degassing; and, finally, installation under very carefully controlled conditions.

Even with all the consideration given to the reduction of oxidation as a source of deterioration, however, samples of oil removed from cables after years of service may show the presence of significant quantities of oxidation products, although the source and mechanism by which they are produced have not been satisfactorily explained. Consequently, after a term of service, cables have an appreciable energy loss which, as it grows, occasions because of the inherent temperature limitations a decrease in the revenue load which the cable can carry. Hence further knowledge of the properties of different types of oil, of their comparative powers of resistance to oxidation, of the electrical characteristics of such oxidation products as may be produced, and of the likely life of such oils in service becomes of much importance.

In an effort to answer the questions here involved, the Institute researchers have had to build equipment which would reproduce on a laboratory scale service conditions and which would permit a study of the mechanisms and variables concerned. Furthermore, it was necessary to develop and build electrical and chemical equipment capable of very delicate measurements and capable of being itself kept free from contaminations which would vitiate results. The extreme sensitivity of the measuring equipment is required for a number of reasons, among which are the necessity for working with narrow cuts of an oil and later with straight hydrocarbons of known composition —

System for making and chemical insulating. The spherical contains oil sample materials, such as paper, as used in cables. Two electrical measuring cells — the two dark rods nearest the center — sealed joint supports, enable the making of electrical measurements on the oil or oxidation during the test. The center as a glass pump operated by a plunger (the center vertical rod) gives a reciprocating movement — ground-glass joint — mounted on each at the bottom of pump mechanism — sample to insure uniform conditions within the pumps gas from sample up the tube, then down the external glass tube, finally dispersing the gas in the form of continuous small bubbles up through the oil sample. A ground-glass joint, with tubing reaching to the bottom of cell, permits removal of an oil sample during process of deterioration. Other ground-glass joints connect the system to an automatic oxygen-feed apparatus which continuously supplies oxygen under constant pressure corresponding to the rate at which the oxygen reacts with the oil, and to associated equipment which permits volume of oxygen consumed to be determined at any time.



ing electrical studies of electrical oil deterioration. The glass flask contains contact materials, such as paper and copper-plated platinum-glass rods nearest the center — sealed joint supports, enable the making of electrical measurements on the oil or oxidation during the test. The center as a glass pump operated by a plunger (the center vertical rod) gives a reciprocating movement — ground-glass joint — mounted on each at the bottom of pump mechanism — sample to insure uniform conditions within the pumps gas from sample up the tube, then down the external glass tube, finally dispersing the gas in the form of continuous small bubbles up through the oil sample. A ground-glass joint, with tubing reaching to the bottom of cell, permits removal of an oil sample during process of deterioration. Other ground-glass joints connect the system to an automatic oxygen-feed apparatus which continuously supplies oxygen under constant pressure corresponding to the rate at which the oxygen reacts with the oil, and to associated equipment which permits volume of oxygen consumed to be determined at any time.

both conditions inherently limiting the volumes of oil available; and the fact that fairly highly refined oils as normally used have very low electrical losses initially. An indication of this sensitivity may be obtained when it is considered that the volume of oil measured for its electrical characteristics is of the order of 0.04 cubic inch and the electrical loss as measured may be as low as 10^{-9} watt.

The electrical equipment and measuring apparatus developed for the immediate use of this project have encouraging possibilities for valuable applications in other work. In the study of the oxidation of mineral oils, both for electrical application and for lubrication, the quantitative determination and physical state of the chemical products formed are important for effective analysis of the problem. Such determination by purely chemical means is quite difficult and time consuming. The electrical measurements, however, give promise of

permitting an interpretation of the chemical products formed and, in addition, requiring much less time.

Available for study at the present time are sixty samples of mineral oil, specially prepared by various refining procedures and obtained from co-operating companies representing the oil refiners. The purpose of this aspect of the research program is to establish a way of rating oils of different initial physical and chemical properties on the basis of efficiency for electrical application.

During the past year, the question of how the undesirable oxygen gets access to the interior of cables has been under more active study. Measurements of the amounts of oxygenated components in samples of oil removed from cables in service gave results that would have required the entrance of amounts of air surprisingly large in comparison. Hence the question has arisen of what other possible sources

of oxygen might have contributed to bring about such deterioration. Since, during recent years, mineral oil in storage tanks and in pipe lines has been shown to contain bacteria which caused undesirable consequences, bacterial counts have been made on the component parts of the insulation in cables directly after manufacture and also after a term of service. They revealed the presence of micro-organisms. It has not been determined that the organisms present could have produced the deterioration measured, but at least their presence offers as reasonable an explanation of the source of deterioration as do others proposed.

The Humanizing of Architecture

Functionalism Must Take the Human Point of View to Achieve Its Full Effectiveness

BY ALVAR AALTO

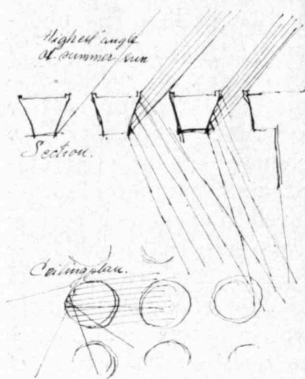
IN contrast with that architecture whose main concern is the formalistic style which a building shall wear, stands the architecture which we know as functionalism. The development of the functional idea and its expression in structures are probably the most invigorating occurrences in architectural activity in our time, and yet function in architecture — and so also functionalism — are not so very easy to interpret precisely. "Function" is the characteristic use, or work, or action of a thing. "Function" is also a thing or quantity that depends upon, and varies with, another. "Functionalism" the dictionaries boldly define as "conscious adaptation of form to use" — it is both less and more than that, for truly it must recognize and reckon with both of the meanings of "function."

Architecture is a synthetic phenomenon covering practically all fields of human activity. An object in the architectural field may be functional from one point of view and unfunctional from another. During the past decade, Modern architecture has been functional chiefly from the technical point of view, with its emphasis mainly on the economic side of the building activity. Such emphasis is desirable, of course, for production of good shelters for the human being has been a very expensive process as compared with the fulfillment of some

other human needs. Indeed, if architecture is to have a larger human value, the first step is to organize its economic side. But, since architecture covers the entire field of human life, real functional architecture must be functional mainly from the human point of view. If we look deeper into the processes of human life, we shall discover that technic is only an aid, not a definite and independent phenomenon therein. Technical functionalism cannot create definite architecture.

If there were a way to develop architecture step by step, beginning with the economic and technical aspect and later covering the other more complicated human functions, then the purely technical functionalism would be acceptable; but no such possibility exists. Architecture not only covers all fields of human activity; it must even be developed in all these fields at the same time. If not, we shall have only one-sided, superficial results.

The term "rationalism" appears in connection with Modern architecture about as often as does "functionalism." Modern architecture has been rationalized mainly from the technical point of view, in the same way as the technical functions have been emphasized. Although the purely rational period of Modern architecture has created constructions where rationalized technique has been exaggerated and the human functions have not



Diffused sunlight enters the combined hall and reading room of the Viipuri Library through conical skylights calculated to catch the sun's rays at even their highest angle and scatter light uniformly on the reader's book, as the designer's croquis indicate.



Th. Aalto



been emphasized enough, this is not a reason to fight rationalization in architecture. It is not the rationalization itself which was wrong in the first and now past period of Modern architecture. The wrongness lies in the fact that the rationalization has not gone deep enough. Instead of fighting rational mentality, the newest phase of Modern architecture tries to project rational methods from the technical field out to human and psychological fields.

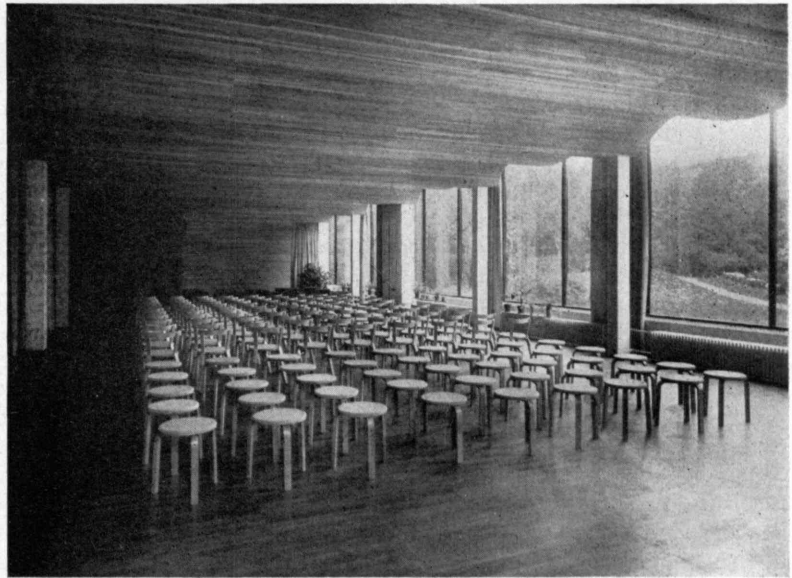
It might be well to have an example: One of the typical activities in Modern architecture has been the construction of chairs and the adoption of new materials and new methods for them. The tubular steel chair is surely rational from technical and constructive points of view: It is light, suitable for mass production, and so on. But steel and chromium surfaces are not satisfactory from the human point of view. Steel is too good a conductor of heat. The chromium surface gives too bright reflections of light, and even acoustically is not suitable for a room. The rational methods of creating this furniture style have been on the right track, but the result will be good only if rationalization is exercised in the selection of materials which are most suitable for human use.

The present phase of Modern architecture is doubtless a new one, with the special aim of solving problems in the humanitarian and psychological fields. This new period, however, is not in contradiction to the first period of technical rationalization. Rather, it is to be understood as an enlargement of rational methods to encompass related fields.

During the past decades architecture has often been compared with science, and there have been efforts to make its methods more scientific, even efforts to make it a pure science. But architecture is not a science. It is still the same great synthetic process of combining thousands of definite human functions, and remains *architecture*. Its purpose is still to bring the material world into harmony with human life. To make architecture more human means better architecture, and it means a functionalism much larger than the merely technical one. This goal can be accomplished only by architectural methods — by the creation and combination of different technical things in such a way that they will provide for the human being the most harmonious life.

Architectural methods sometimes resemble scientific ones, and a process of research, such as science employs, can be adopted also in architecture. Architectural research can be more and more methodical, but the substance of it can never be solely analytical. Always there will be more of instinct and art in architectural research.

Scientists very often use exaggerated forms in analyses in order to obtain clearer, more visible results — bacteria are stained, and so on. The same methods can be adopted in architecture, also. I have had personal experience with hospital buildings where I was able to discover that especial physical and psychological reactions by patients provided good pointers for ordinary housing. If we proceed from technical functionalism, we



Lecture hall in the Viipuri Municipal Library

shall discover that a great many things in our present architecture are unfunctional from the point of view of psychology or a combination of psychology and physiology. To examine how human beings react to forms and construction, it is useful to use for experimentation especially sensitive persons, such as patients in a sanatorium.

Experiments of this kind were performed in connection with the Paimio Tuberculosis Sanatorium building in Finland and were carried on mainly in two special fields: (1) the relation between the single human being and his living room; (2) the protection of the single human being against large groups of people and the pressure from collectivity. Study of the relation between the individual and his quarters involved the use of experimental rooms and covered the questions of room form, colors, natural and artificial light, heating system, noise, and so on. This first experiment dealt with a person in the weakest possible condition, a bed patient. One of the special results discovered was the necessity for changing the colors in the room. In many other ways, the experiment showed, the room must be different from the ordinary room. This difference can be explained thus: The ordinary room is a room for a vertical person; a patient's room is a room for a horizontal human being, and colors, lighting, heating, and so on must be designed with that in mind.

Practically, this fact means that the ceiling should be darker, with an especially selected color suitable to be the only view of the reclining patient for weeks and weeks. The artificial light cannot come from an ordinary ceiling fixture, but the principal center of light should be beyond the angle of vision of the patient. For the heating system in the experimental room, ceiling radiators were used but in a way which threw the heat mainly at the foot of the bed so that the head of the patient was outside the direct heat rays. The location of the windows and doors likewise took into account the patient's position. To avoid noise, one wall in the room was sound absorbing, and wash basins (each patient in the two-patient rooms had his own) were especially designed

so that the flow of water from the faucet hit the porcelain basin always at a very small angle and worked noiselessly.

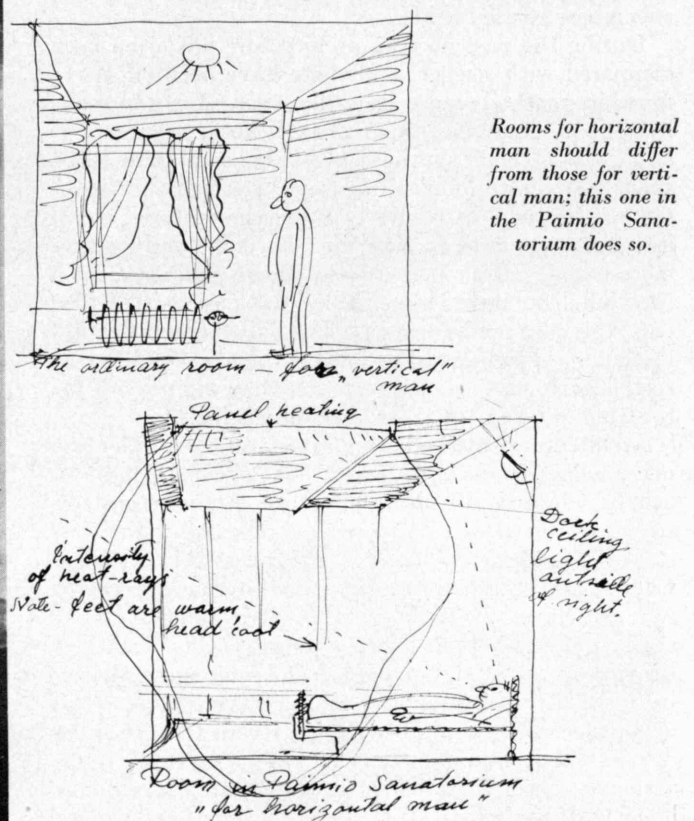
These are only a few illustrations from an experimental room at the sanatorium, and they are here mentioned merely as examples of architectural methods, which always are a combination of technical, physical, and psychological phenomena, never any one of them alone. Technical functionalism is correct only if enlarged to cover even the psychophysical field. That is the only way to humanize architecture.

A picture of a typical patients' room at the sanatorium accompanies this article. Two other examples — from the Viipuri Municipal Library — show similar problems. The flexible wooden furniture is a result of experiments also made at the Paimio Sanatorium. At the time of those experiments the first tubular chromium furniture was just being constructed in Europe. Tubular and chromium surfaces are good solutions technically, but psychophysically these materials are not good for the human being. The sanatorium needed furniture which should be light, flexible, easy to clean, and so on. After extensive experimentation in wood, the flexible system was discovered and a method and material combined to produce furniture which was better for the human touch and more suitable as the general material for the long and painful life in a sanatorium.

The first picture of the Viipuri Municipal Library (page 14) shows only one part, but the most important part, of this building. The main problem connected with a library is that of the human eye. A library can be well constructed and can be functional in a technical way

even without the solving of this problem, but it is not humanly and architecturally complete unless it deals satisfactorily with the main human function in the building, that of reading a book. The eye is only a tiny part of the human body, but it is the most sensitive and perhaps the most important part. To provide a natural or an artificial light which destroys the human eye or which is unsuitable for its use, means reactionary architecture even if the building should otherwise be of high constructive value.

Daylight through ordinary windows, even if they are very large, covers only a part of a big room. Even if the room is lighted sufficiently, the light will be uneven and will vary on different points of the floor. That is why skylights have mainly been used in libraries, museums, and so on. But skylight, which covers the entire floor area, gives an exaggerated light, if extensive additional arrangements are not made. In the library building in the accompanying illustrations, the problem was solved with the aid of numerous round skylights so constructed that the light could be termed indirect daylight. The round skylights are technically rational because of the monopiece glass system employed. (Every skylight consists of a conical concrete basement six feet in diameter, and a thick jointless round piece of glass on top of it without any frame construction.) This system is humanly rational because it provides a kind of light suitable for reading, blended and softened by being reflected from the conical surfaces of the skylights. In Finland the largest angle of sunlight is almost 52 degrees. The concrete cones are so constructed that the sunlight always remains indirect. The surfaces (*Concluded on page 36*)



The Technology behind Gutenberg

Achievement of Printing with Movable Types Was Built on Prior Work of Numerous Technicians; Aim of Promoting Education Was Primary

BY DOUGLAS C. McMURTRIE

THAT portion of the civilized world not too disastrously ravaged by war has this year been celebrating the five hundredth anniversary of the invention of printing, an event widely regarded as a turning point in world history. Victor Hugo wrote that it was the most important event in the history of mankind, and many general historians have been inclined to agree with him. The invention of printing with movable types was obviously a technological achievement of wide social and political significance. Whence this significance?

The answer is found in the fact that printing provided the world with a mechanism for the recording and exchange of knowledge. Coming to birth at a time when few men could read and write, it provided the tools of education which enabled young students to master the elementary school subjects and advanced scholars to profit by the knowledge not of one professor but of hundreds of authorities of all periods. In essence, the inventor of printing gave men the means of making available to many, wherever located, information hitherto recorded in a single manuscript in the possession of a single individual.

It has sagely been observed that when any need of the world becomes sufficiently pressing, a man turns up to supply it. So it was with printing. In the early years of the Fifteenth Century, Europe was shaking off the lethargy of the Middle Ages and showing evidences of a new life and activity. Men emancipated from the shackles of feudalism were finding means of winning their own way in the world. The arts and crafts were making surprising progress and proving profitable to those who practiced them. Thus it came about that more men, ambitious to give their sons educational advantages which they themselves had been denied, could afford to send the boys to individual teachers for instruction. These schoolboys needed most urgently copies of the elementary Latin grammar written by Aelius Donatus

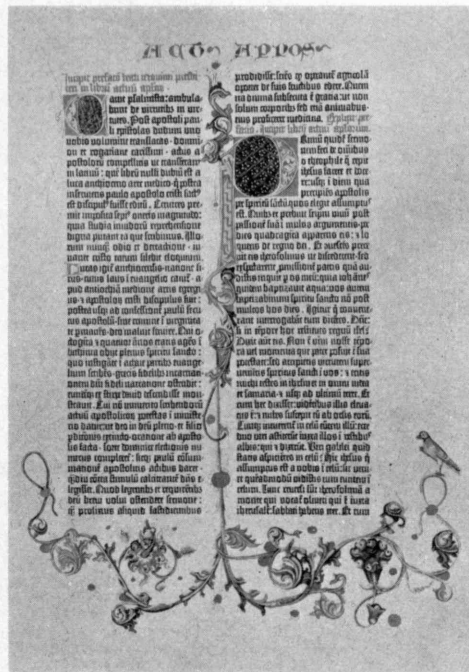
in the Fourth Century and used by over sixty generations of students. But the cost of a copy of this Donatus, if the copy was handwritten by a scribe, was prohibitive to many fathers.

Meanwhile the few universities, such as those at Bologna and Paris, were growing rapidly. Since students could not possibly afford to purchase the costly handwritten volumes produced by the scribes, lending

libraries grew up at institutions of higher learning. When the fees for the loan of books of considerable size became onerous, the practice arose of dividing the volumes into pamphlets known as *pecia*, which a student could borrow one at a time.

Books produced in quantity and at a reasonable cost were essential to man's further self-advancement. That a number of men saw the need and were attempting to meet it is apparent, for several records exist of metal alphabets, artificial writing, and the like. It was given to Johannes Gutenberg of Mainz to find, after years of patient experimentation, the one right way to produce books economically enough to bring them within the reach of the students who needed them. As Marconi built on the discoveries of Maxwell and Hertz, as Edison drew on the achievements of Faraday, so Gutenberg built on the prior work of numerous technicians. What did he have available in the way of existing technological developments on which he could draw in synthesizing a new process?

Most important, he was fortunate in having at hand an economical material on which to print. Had Gutenberg been restricted to the vellum so widely used by the scribes, the cost of material might well have proved prohibitive. Paper made from rags had long been known in the Orient and even in Egypt, but the manufacture of it in Europe began a relatively short time before the invention of printing. The record of the first papermaking in China is dated A.D. 105. In a campaign early in the Eighth Century, in what is now



A decorated page of the first Gutenberg Bible, the printing of which was completed at Mainz about 1455. The heading, decorative initial, and the elaborate page ornamentation were added to the printed page with pen and brush. It is estimated that approximately 150 copies were printed of this book of 1,282 pages. Few are in existence.

Russian Turkestan, the Arabs captured some Chinese papermakers, who taught their captors the secret of the craft.

The making of paper began, therefore, in the Mohammedan world at Samarkand in 751. In the Ninth Century, paper mills began to function in Damascus, which was for a long time the world's principal source of paper supply. In that century also, the art spread to Egypt. By the early part of the Twelfth Century, it had reached Morocco. About 1150, papermaking jumped the Mediterranean to Xativa in Spain, which was then part of the Moslem world.

The manufacture of paper in Christendom began about 1270 at Fabriano, Italy, where handmade papers are still being made. More than a century after the Fabriano beginning, the first paper mill was established in Germany at Nuremberg. And, interestingly enough, the first paper mill in Strasbourg began operations in 1430, just a few years before Gutenberg began his experiments in that city. A supply of paper was thus ready to hand.

Europeans in Gutenberg's time already were familiar with two processes which involved transferring onto a sheet of suitable material a pigment spread over a design or words in relief. One process was the printing of woodcuts on paper in the reproduction of saints' pictures and playing cards. This art was known in the Far East at least as early as the Eighth Century and was probably transmitted to Europe through the medium of playing cards carried home by travelers. The design or words to be reproduced were drawn on, or traced onto, a flat wood block; the portions of the block which were not to show in the print were then cut away. Thereupon the block was laid face up on a table and inked with water-color ink; a piece of paper was laid on it and was pressed against the face of the block by being rubbed. As early as the first quarter of the Fifteenth Century, cutters of wood blocks, who had learned to cut the lettering of some explanatory material on the same block with the holy picture, made such blocks in a series. When sheets impressed against a series of blocks were bound together, the product became known as a block book. Each page of such a book was printed invariably on one side of the paper only. The prints were placed back to back in binding.

A modern reconstruction of the Gutenberg workshop, which Johann Faust took over following a lawsuit. At the left is the case which held the types. In the center is a modern replica of the Gutenberg press. At the right is the furnace for melting the lead to cast into types. On top of the smoke apron of the furnace are ancient type-casting molds.

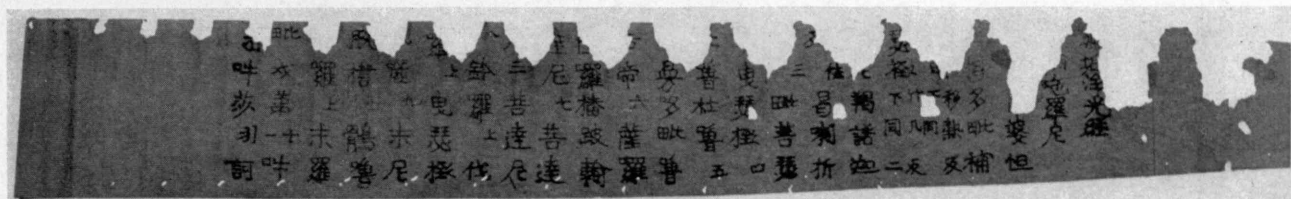
The other process was textile printing. Apparently cloth was printed in Europe from designs on woodcuts before paper was so used. Furthermore, textile printing was done with a press not unlike that later used for printing paper.

Both textile printing and the printing of woodcuts undoubtedly did much to stimulate Gutenberg's thinking and to shape its course. Though we cannot say so with certainty, it seems to me inevitable that Gutenberg first explored the possibility of cutting complete texts on wood blocks and printing them either by the rubbing process or with a press. But, inevitably, he would have found cutting a text of considerable length on wood to be an impossibly long and tedious job, and after the one book was done, he would have had to start in again, right from the beginning, on the next one.

By the time of Gutenberg, moreover, there was a background of metal letter characters. The Chinese use of movable types antedated Gutenberg's invention by more than four centuries. About the midpoint of the Eleventh Century, types were made of baked clay by Pi Shêng. These earthenware types were set into a heated layer of a resinous compound on a flat iron plate. When the compound cooled, the types were held firmly in place. In the Fourteenth Century, moreover, there were made in China some engraved wooden types, specimens of which have been preserved.

The records of Korea show the establishment in 1392 of a governmental department of books, charged with responsibility for "the casting of type and the printing of books." Cast metal types are believed to have been used in Korea before, and at the end of the Fourteenth Century this activity was revived. Numerous different fonts were cast. Specimens of these types, which were rather flat, with half-round arches in their bases to fit over guide rods in the setting frame, may be seen in a number of American museums — in New York,





M.I.T. Photo

Dating from 770, this prayer, executed for the Empress Shotoku of Japan, is the first printing known to exist in the world. This was printed from one single block of wood, not from movable types. The example here reproduced is among the treasures of the Dard Hunter Paper Museum at Technology.

Philadelphia, Chicago, Ann Arbor, and elsewhere. One near-contemporary writer has said that these types were cast in sand molds formed with wooden models. The surface texture of the preserved specimens confirms this statement.

These single-type developments failed to flourish, however, because of the multiplicity of characters in the Chinese written language, which required a large number of different types and made the tasks of composition and distribution exceedingly difficult.

As Gutenberg studied more and more deeply the problem he was attacking, he obviously came to the conclusion that to print many different books he needed individual letter characters which could be assembled in one sequence for a given text, printed from, distributed, and then reassembled in another sequence in setting another text or another page in the same book. An equipment of such nature would meet any requirement and could be used over and over again. The width and height of the face of one of these characters would be automatically determined by the size and proportion of the individual letter of the alphabet which it represented. The other dimension — from face to base, or foot — could be determined only by trial and error. This dimension, which printers specify today as height-to-paper, would be influenced by two considerations: The types must be of a shape that would enable them to be picked up conveniently, one by one, and assembled; and the height-to-paper would have to be sufficient to prevent buckling of the type page when it was locked up under pressure from both directions. We know the height-to-paper of Fifteenth Century types from several accidents in printing, when letters pulled out of the form, lay across the page of types, and impressed an outline of their profiles on the next sheets printed. The height was very close to that in use today, though it varied then between one printing office and another, each printer making his own equipment and determining his own standards.

To obtain letter characters or types in quantity, Gutenberg must soon have seen, the one method by which many such units could successfully and economically be produced was casting. Many objects with much fine detail were cast in sand by the goldsmiths. Most authorities agree that Gutenberg undoubtedly tried out casting in fine sand, using carved wood letters as models. Some believe that among extant specimens of printing are samples which were set with sand-cast types. This process, however, would involve so many difficulties that Gutenberg soon sought and found a better method. This second step is presumed to have been taken with master types, or punches, cast in brass in sand molds

from wood models, with the letter faces then touched up or re-engraved by hand. Letters may, of course, have been cut directly on the brass of the punches by hand. These letter punches were then driven into billets of lead, heated to the point of becoming soft. A billet, with the face of the letter driven into it, became a matrix, in which the face of a type could be cast in lead. To shape the body, or shank, of the type, however, some metal mold with a rectangular opening would have to be placed over the matrix. Molten metal poured into this well would, therefore, when solidified, form a type. The casting could be repeated indefinitely to provide the printer with a hundred — or a thousand — identical types for the same letter.

Practice in several crafts might have helped Gutenberg conceive the letter punch with which a matrix could be driven. The earliest use of such a punch known to me was that by the diesinkers in making dies for coins. After they had cut into the soft steel of the die the emperor's head or coat of arms, they had to deal with the lettering running around the coin just inside its circumference. This would have been an arduous chore to cut by hand; so the die cutters made, instead, a steel letter punch for each capital letter, driving the punches *one at a time* into the die. Significantly enough, Gutenberg's father was one of the chief accountants of Mainz and quite probably was identified with that city's mint, where young Johannes may well have seen the lettering being driven into dies with such letter punches.

Bookbinding was another craft in which individual metal letter stamps were used. The men who bound the manuscript books written by the scribes found it a chore to letter each volume by hand. Some of them therefore cut capital letters in intaglio on metal stamps, using these stamps, one at a time, to press down on the dampened leather of the bindings on which they were working, bringing up the letters of the titles in relief. There is extant one book, bound as early as 1436, on which the lettering was done with the aid of such stamps. And there were like practices in a number of other trades.

The men who had been working in the fine arts had developed, only a few years before the time of Gutenberg's invention, oil paints to supplant the tempera colors used by earlier generations of artists. This was fortunate, for the water-color inks which sufficed to print woodcuts would not distribute evenly over a smooth metal surface. An oily, sticky ink was required. The invention of paints with a varnish base has frequently been credited to the Flemish painter, Jan van Eyck, about the year 1410. (Continued on page 34)

The Problem of Food in Wartime

Nutrition for Soldiers and Civilians among the Most Important Factors in Every Great Conflict

BY JAMES A. TOBEY

ADEQUATE nutrition for soldiers and for the civilians who support them is one of the most important factors in the winning of wars. This has been the experience in every great conflict in history, from the days of the glories of Thermopylae and Arbela to the present struggle. The art of war has changed, but not the need for proper subsistence.

The defeat of the Germans in 1918 was due as much to malnutrition as to the power and skill of their conquerors. The populace of Germany was suffering from a food shortage which had become so acute in 1917 that the people and the army were on the verge of physical collapse. Similarly, the rout of the Italians at Caporetto in October, 1917, has been attributed in great measure to the drastic reduction in the army ration which had been put into effect the preceding February. No army can fight valiantly on an empty or shriveled stomach. No army will fight with fervor when the people behind it are starving or undernourished. Food is the one munition that makes for might, promotes morale, and fosters the fighting spirit. In the camp and in the field the common cry of the soldier is, "When do we eat?" Food was our biggest problem in the last war. It will be our biggest problem in the next.

During the World War, British troops in the East suffered from scurvy and beriberi, even as the Crusaders of past centuries had been afflicted with these same nutritional deficiency diseases. In Germany, malnutrition prevalent during war was the direct cause of a great increase in tuberculosis in the years following. Even the noncombatant nations of that period were affected: Many Danish and Dutch children developed the eye disease xerophthalmia because they had been deprived of vitamin A when most of their butter was exported to the warring countries.

The problem of food in wartime is, therefore, one

involving both the quantity and the quality of the daily fare. From the standpoint of quantity, the United States is amply supplied. We can easily furnish sufficient food of good quality to an army of almost any size, but this fact does not mean that everyone in this country is now well fed or that our national nutrition cannot be improved.

Actually a surprising and inexcusable amount of malnutrition exists in the one country which has a real abundance of food.

When our Army was at its peak in the World War, we were purchasing, transporting, storing, and delivering 20,000,000 pounds of food every day. Toward the end of the War, troops of the American Expeditionary Force in France were consuming 9,000,000 pounds of food a day, most of which had to be shipped across the Atlantic, dodging submarines and the other comparatively

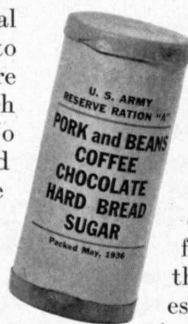
mild perils of that period. The

American soldier always has been a voracious eater. Young, active, and healthy, he consumes about 1,800 pounds of food a year, in contrast to an annual average consumption of 1,440 pounds for the civilian. But to supply even an army of 4,000,000 would require less than a 1 per cent increase in our normal production of food. The only real problem would concern the supply of a relatively few more or less non-essential imported items — such as coffee — items desirable from the standpoint of flavor

or as stimulants but contributing little or nothing of value to nutrition.

The problem of the quantity and variety of food is much more serious in Europe. In Great Britain, where 30 per cent or more of the food must be imported, rationing has been in effect for some time, with meatless days each week. In Germany, the subjects of the vegetarian Herr Hitler are said to be living largely on bread and potatoes. Famine apparently is imminent in France and other Nazi-oppressed countries, while in Russia it is doubtful if anyone except an occasional commissar has had a square meal for years. This is one of the prices paid for toleration of dictators.

The nutritive quality of the available victuals, significant even when food is abundant, as in the United States, assumes great importance when foodstuffs are scarce, as in Europe. This cogent fact has been recognized in Great Britain, where much attention has been given to the national diet by the government, by the British Medical Association, by agricultural authorities, and by many others. Malnutrition among the less privileged members of the populace has been as rife in England as in America. An "iron ration" for use of the people during siegetime was recently proposed by a committee of British scientists, headed by Sir John Orr. This reasonably well-balanced diet, which is designed to provide minimum sustenance for an individual, consists of a daily quota of 11.8 ounces of bread, 1.8 ounces of fats, 1 ounce of sugar, 0.6 pint of milk, 6 ounces of



Wheat

Harold M. Lambert



vegetables, 16 ounces of potatoes, and 2 ounces of oatmeal. It yields 2,100 units of food energy, of which 1,300 come from the bread, fats, and sugar. Such a diet would not be adequate for a soldier or an industrial worker, each of whom needs, on the average, at least 4,000 calories of nourishing foods a day.

In order to insure a greater intake of certain necessary minerals and vitamins by the people, the British Ministry of Food and the Millers Mutual Association have agreed that as soon as possible all white flour will be fortified by the addition of vitamin B₁ (thiamin) and of calcium. Thiamin, a natural constituent of whole wheat, is necessary for a healthy condition of the body cells, for sound nerves, and for the proper utilization of carbohydrate foods. It stimulates appetite, helps control constipation, and prevents beriberi. Calcium not only aids in building bones but assists blood clotting and helps to prevent fatigue and certain types of nervous disorders.

Similar restoration of vitamins and minerals to white bread is being accomplished in our own country by the voluntary action of the millers and bakers. In contrast to the usual British loaf, our commercial white bread, which accounts for 85 per cent of all that is eaten, is customarily made with liberal amounts of milk solids. This use of milk, most often in the form of powdered defatted milk, not only adds a substantial amount of calcium to the loaf but also contributes excellent proteins for body building and small amounts of certain vitamins, such as vitamin B₂ (riboflavin). The vitamin B₁ content of American bread is enriched by the use of specially milled flours, by the use of high-vitamin yeast, by the direct addition of crystalline vitamin to the flour or dough, or by a combination of these effective methods.

Since bread, as about the cheapest source of necessary food energy, bulks large in the diet of soldiers and industrial workers and is also the universal food of the civilian, furnishing 25 per cent or more of his calories, these improvements in modern breadmaking are of great significance. A good source of proteins of high biological value and of calcium and phosphorus in favorable ratio for physiological needs, bread now is becoming an excellent source of indispensable vitamins, particularly thiamin. Bread and either pasteurized or certified milk, the best foundations for a well-balanced diet, are prominent in our present army ration. The civilian diet includes about ten billion loaves of bread a year and some thirteen billion quarts of milk, but the consumption of both of these foods could be increased to advantage.

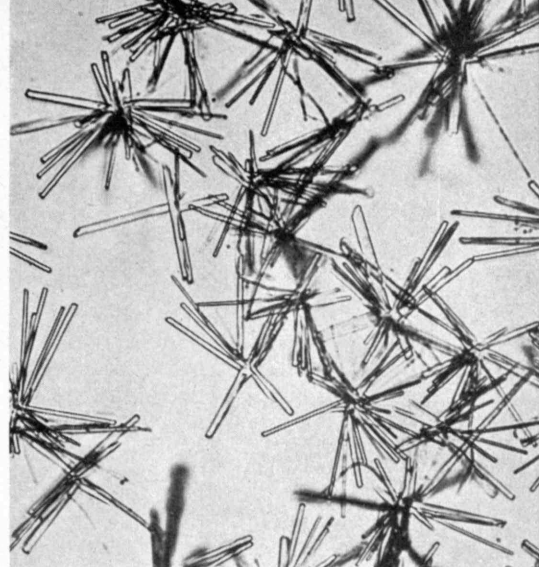
The garrison ration of the United States, as furnished by the Quartermaster Corps, comprises five pounds of food for the daily fare of each enlisted man. (Officers must provide their own food.) This daily individual garrison ration includes twelve ounces of wheat flour, or eight ounces of bread and four ounces of flour; two ounces of butter; ten ounces of beef and eight ounces of other meats; ten ounces of potatoes and eleven ounces of other fresh vegetables; eight ounces of fresh milk and one ounce of evaporated; five ounces of sugar; two ounces of coffee; about five ounces of fruit; and smaller

amounts of various other foods. This ration is not a menu but, rather, is a system of bookkeeping. It represents a money allowance, for which the quartermaster issues credit to the company mess. The hard-boiled mess sergeant feeds the troops what he thinks they want and what his budget permits. He is seldom an expert on scientific nutrition, although some endeavor is made by army officials to keep him posted on the basic principles of correct human alimentation.

During campaigns and in the field, the ration allowance is suspended and special field rations are issued. During the past year or two the Quartermaster Corps has been experimenting with cooked meals in tin containers, which can be heated before being served or, if necessary, served cold. Included in these packages are beef and vegetable hash, beef stew, corned-beef hash, ham and beans, eggs and rice. Another tin container has whole-wheat biscuits, soluble coffee, and sugar. Still another has an emergency chocolate ration consisting of four-ounce bars made of skim-milk powder, sugar, chocolate, oat flour, and flavoring. These field rations, which were tested in the army maneuvers last summer, have proved of value for the use of troops on the march and under campaign conditions. The chocolate ration was popular, and the others were considered not unpalatable although they aroused less enthusiasm than did a hearty meal of such items as baked Virginia ham with raisin sauce, boiled potatoes, spinach, Waldorf salad, bread and butter, and gingerbread with whipped cream, which was served one day to members of the First Army campaigning in northern New York.

At any rate, the traditional corned willy of our Army, hard tack and corned beef, has gone into the discard, along with squads-east and -west. The Quartermaster Corps is also experimenting with various dehydrated fruits and vegetables which are supposed to retain all their nutritive properties and which can be shipped in cans containing much less bulk than is needed for the fresh foods. During and after the World War, Samuel C. Prescott, '94, Dean of the Department of Health at the University of California, was in charge of investigations on the dehydration of foods.

The chief difficulty in providing field rations and in a military emergency calling for the mobilization of millions of soldiers would not be the preparation of the foods but the problem of containers. Most of the tin we use comes (Continued on page 36)



Crystals of thiamin, vitamin B₁
Courtesy Merck and Company, Inc.



Rooms for Listening

Auditorium Acoustics Helps Hearers Hear; Its Story Illustrates How a Science Grows

BY PHILIP M. MORSE

AUDITORIUM acoustics, an infant science less than fifty years old, is not an important branch of physics, but the story of its development is an interesting example in miniature of the growth of a science. The student of the comparative embryology of sciences will find here a simplified version of the historical pattern followed by other more mature and important sciences. The simple fundamentals of room acoustics were worked out by one man, Wallace Clement Sabine, between 1895 and 1900; for twenty years thereafter few other workers took much interest in the field. Then the utility of Sabine's results began to be realized, and the "practical" experts took over. These workers soon piled up a mass of empirical data, and of confusion as the data outgrew Sabine's simple theory. Only recently has the process of reintegration begun: The mass of data is gradually being fitted into an expanded theory, and the relation between this theory and other branches of physics is being clarified.

As the name implies, an auditorium should be a "place for hearing," but for centuries little logical effort was spent in making the place fit the name. Architects seemed to be singularly incapable of finding a satisfactory solution except by chance, or, when they did turn out a good auditorium, of understanding why it was good. Their training emphasized visual form, not substance, and did not teach them the scientific technique for finding the causes of acoustic defects. Even today many architects are not sufficiently interested in acoustics to learn its simple fundamentals themselves and not sufficiently aware of its importance to ask an expert to check their designs. Too often an auditorium is built first and then patched up acoustically, a process about as sensible as making an automobile first in the graceful form of a boat, and then regretfully soldering on wheels to make the contraption fulfill its original purpose.

In 1895 Wallace Sabine, an instructor at Harvard, was asked to see what could be done to improve the acoustics of the auditorium in the Fogg Art Museum. He decided not to spend his time trying to patch up one particular auditorium but to attack

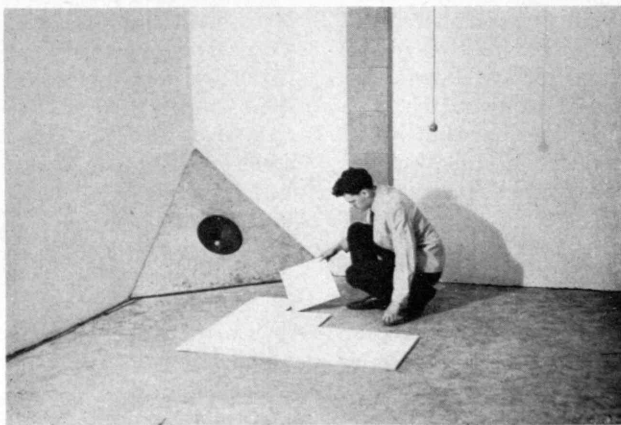
the problem from a more general point of view. He wished to find a solution which would be of help in fixing up other faulty auditoriums and perhaps be of use in preventing the building of faulty auditoriums in the future.

First, Sabine had to find a measurable criterion in terms of which the acoustic quality of an auditorium could be expressed. He had to pick from the array of different possible acoustic defects the one most important defect which is present in all poor auditoriums. This question of standards was a crucial one; when it was answered correctly, the problem would be half solved.

After eliminating echoes and focused whispering-gallery effects as being special faults, present in only a few auditoriums, Sabine finally decided that the most prevalent defect of rooms was a sort of acoustic inertia. Some rooms take a long time to fill up with sound and, what is worse, take a long time to empty themselves once they are filled with sound. In such rooms speech is hard to understand, for the sluggish room does not have enough time to clear away the previous syllable before receiving the next one; musical sounds also are confused and overlapping — staccato notes being changed to legato ones.

Such slowness in eliminating sound from a room Sabine called "reverberation," and he set out to measure it. There were no vacuum tubes or sensitive microphones in those days; so he had to be satisfied with an organ pipe and a chronograph. He would blow a note of standard intensity on the organ pipe, shut off the pipe suddenly, and time how long it took for the sound intensity to drop to one-millionth of its original value

as judged by his ear. This time he called the "reverberation time" of the room. After measuring many rooms, he satisfied himself that reverberation time was a dependable measure of acoustic quality. The time was practically the same no matter where the organ pipe was placed in a room. All rooms judged satisfactory had reverberation times of less than two seconds; rooms with bad acoustics had times longer than two seconds. The first half of his problem was finished: He had found his measurable criterion.



Auditorium acoustics at work: acoustic material being placed for test in the M.I.T. sound chamber. Loud-speaker in room corner produces sound of specified properties; microphone above worker's shoulder measures effect produced by the absorbing material.

Next, Sabine had to find out whether the reverberation time of a room could be changed. Presumably the walls would be a factor; for if there were no walls, the sound could not linger. Common sense told him that the reverberation time depended on the materials composing the walls, ceiling, and floor, and on the dimensions of the room. Whether it depended on other properties would have to be decided by experiment.

The material of the wall would have an important effect, which must be measured. Porous materials would absorb a large fraction of incident sound, whereas hard surfaces would reflect a large amount. Sabine called the fraction of incident sound energy which the surface absorbed the "absorption coefficient" of the surface, and he devised means of measuring it by comparison with an open window, which presumably had an absorption coefficient of unity. By the addition of more and more absorbing material to the floor and walls, he was able to show that the reverberation depended on the total area of absorbing material exposed to the sound. The quantity obtained by multiplying the area of each different absorbing material on the room surface by its respective absorption coefficient, and then adding all these products together, was called the "total absorption" of the room; the reverberation time turned out to be inversely proportional to this quantity. Sabine also proved that for

normal-shaped rooms the absorbing property of a surface was the same no matter where the surface was located in the room.

The result of measuring several more rooms of different sizes and shapes enabled him to show that the only other important factor was the volume enclosed by a room. His final formula was that the reverberation time is equal to $(1/20) (V/a)$, where V is the volume of the room in cubic feet and a is the total absorption, with areas expressed in square feet. By means of this formula he could compute how much absorbing material would be needed to make the Fogg auditorium satisfactory. This equation is still the most useful formula in auditorium acoustics.

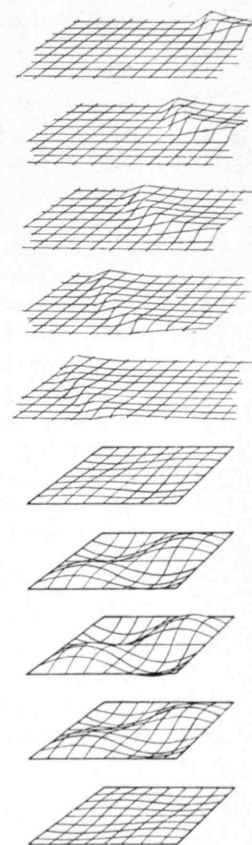
Sabine's investigation probably took him considerably longer than if he had tried blindly and unsystematically to improve the acoustics of the Fogg auditorium alone. But once his work was finished, he could tell not only how to improve that auditorium but how to improve any auditorium. And, what is vastly more important, by studying the blueprints of an auditorium before it was built he could tell whether it was going to be acoustically satisfactory. Prior to his researches, it had been a happy chance when an auditorium turned out to be satisfactory; since then it has been an architectural crime for one to turn out to be unsatisfactory.

In a sense Sabine was lucky that he had such crude instruments for measurement. With modern equipment he might have become so involved in exceptions and small variations as to miss the broad outlines of his theory. For we know now that none of his results is strictly correct — that each of his definitions and rules has exceptions and inaccuracies. It is only approximately true that the absorption coefficient is a unique property of the wall material and is the same no matter where the material is placed in the room. Sabine's famous formula predicts reverberation times which have differed from measured times by 10 per cent in many rooms and by several hundred per cent in a few. These discrepancies, however, do not invalidate his theory as a useful one for acoustical engineers. It does not matter in practical work whether the reverberation time is 1.0 or 1.2 seconds as long as we are sure it is not four seconds. With a little practical experience, moreover, the acoustical engineer finds it is possible to recognize in advance those situations in which use of the formula is likely to give results considerably in error.

Although Sabine's theory has been satisfactory to practical workers, it has become quite unsatisfactory to scientific workers in acoustics. Special situations which do not fit into the general theory may be just annoying details to the engineer; they are very important to the pure scientist, to whom they may give a clue to new aspects of the subject; when investigated, they may lead to a revolution in the fundamental theory. To the practical worker it was particularly unsatisfactory not to have primary standards. Measurements of absorption coefficients by different laboratories gave discordant results until finally, ten years ago, the discrepancies became so obvious that it was agreed to define the absorption coefficient of a material as the result obtained by one particular laboratory using one particular method. This abandonment of all pretense that the absorption coefficient was a fundamental property of the material may have been satisfactory to engineers; it was intolerable to scientific workers. A new theory that would fit the facts had to be developed.

Since that time the field of auditorium acoustics has split into two camps: the conservative, "practical" majority and the growing party of reform. The practical men see no need to complicate their simple picture of room acoustics, insisting that new-fangled notions do not help to design good auditoriums — and as engineers they may be right. The reformers say that it is necessary to understand fully the phenomena of reverberation, that the new ideas will become simple as soon as they are (Continued on page 38)

Idealized flashes of wave motion on a drumhead, taken at successive instants of time. Upper sequence shows a traveling wave. Lower sequence shows a half cycle of motion of a standing wave. Wave motion in three dimensions cannot be shown here so easily. A quiet study of jelly quivering in a glass or of water sloshing in a tub will familiarize the reader with the important properties of three-dimensional standing waves.



Idealized snapshot pictures of wave motion on a string, taken at successive instants of time. Sequence at top shows a traveling wave. Sequence at bottom shows a standing wave during one cycle of its motion. The traveling wave goes places; the standing wave wriggles back and forth in one place.

The Layman's Science

Popular Presentation of What the Laboratories Are Doing Involves Many but Not Surprising Difficulties

BY THE EDITORS OF THE REVIEW

LABORERS in today's scientific wheat field are pursued by a cloud of gleaners equipped with typewriters, sometimes a thesaurus but more frequently fertile imaginations, and, too often, a stare of wide-eyed amazement. Science is "good copy"; the gleaners are the lesser among a numerous and increasing group to whom the popularization of what the laboratories are doing represents cakes and ale.

A scientific accomplishment, the space writer is sure, stands above average chance of publication. A guidebook or gazetteer to the most recently exploited scientific wonderland, the hack writer knows, may command fairly profitable sales. And, to get away from the pedestrian, not a few able lay writers are fascinated by science, show reasonable capacity for understanding it, and appear to enjoy writing about it. Finally, some scientists like to write about their calling and are skilled at doing so.

The question of adequate popularization becomes more difficult and more important as the material to be popularized increases in complexity or strangeness. To explain a simple though unfamiliar topic interestingly is obviously less a task than to simplify a topic both unfamiliar and intricate. But for the fact that scientific topics generally fall in this second class, the craft of popularization of science would differ only very slightly from any other sort of journalistic writing; the remaining slight difference results from the fact that a good many scientific events are likely to have deeper and more complex effects on the lives and well-being of lay readers than are events in other fields subject to popularization. Considerable critical thinking has been done on the question of adequacy. Professor Chauncey D. Leake of the University of California asserts that "popularization of modern science may become a socially beneficial procedure. The success of the effort depends largely upon its sincerity. Journalistic tricks are justifiable if they stimulate attention, provoke entertainment and supply the essential information. Science popularizers should write simply . . . and clearly. . . ."*

* *Science*, XC, No. 2, 326 (July 28, 1939), 85.

Such consideration, however, is not restricted to the popularization of scientific material. From the library rather than the laboratory, we are told by W. M. Frohock, discussing research in the humanities, that "the crying necessity for adequate popularization is still unrecognized when it is not denied outright. . . . At least, the smallness of the number of *œuvres de haute vulgarisation* offered to the American public suggests as much. . . ."†

A charge of inadequacy against the popularization of science rather than of the humanities would be less a surprise, since, by and large, the humanities offer less taxing work to the popularizer than does science. Here, however, the unpredictability of many average readers turns the balance, for though humanistic material might more easily be made available to them in popular terms, scientific matter is often read with the greater eagerness, and in the purveying of the printed word, the demand creates the supply. Yet though the popularization of science meets with an encouraging reception, its presentation leaves not a few opportunities unfilled. The deficiencies are in large measure results of those aspects of science news which make it a more difficult field for popularization than are literature and the other arts.

To popularize is to present to the intelligent but unspecialized mind, understandably and interestingly, the gist of a group of concepts the complete and operative comprehension of which demands specialized training. In simplest terms, popularization is the reduction of exact scientific terminology to possibly less exact, but usually more vivid and familiar, language. Silver iodide "has a negative coefficient of thermal expansion," the scientist says; "it contracts when it is warmed," the popularizer would put it. Popularization of scientific material involves peculiar difficulties, partly because of the vast and inherent complexity of the material itself, partly for other reasons. The usual lay reader lacks not only the special training necessary to a comprehension of the immediate event but also an understanding of

JOSIAH ROYCE used to speak to his classes of the three grades of clearness about the meanings of terms. We have the first grade of clearness when we are able appropriately to accept or reject any object of our acquaintance as belonging or not belonging to the class in question. The second grade of clearness involves, further, the preparedness to classify correctly objects not precisely like those with which we have previously been acquainted; that is, to make the dichotomy, *X* or not-*X*, not only for familiar but also for unfamiliar things, not only for all actual but also for all conceivable objects. The third grade of clearness consists in the ability to specify the criteria by which such classification is determined. This last, of course, is equivalent to definition, the explicit possession of the concept. That the mind may have the first or second grade of clearness without the third, is obvious. It is also evident without discussion, that even when we have, in the ordinary sense, this highest grade of clearness, we do not have this definition explicitly in mind whenever we use a term with understanding. — Clarence I. Lewis, *Mind and the World-Order* (Charles Scribner's Sons, 1929), pp. 86-87.

† *Columbia University Quarterly*, XXXI, No. 1 (March, 1939), 48-49.

the sequence of previous developments which made that event possible. The lay reader's existence is affected in a great many ways by the by-products of science, so that he views from a vantage point of often trivial personal connections the immediate event being reported. All too often neither scientist nor popularizer wrestles successfully with the difficulty of reducing to proper proportion the commercial, applicational, and economic considerations which are really only incidental to the scientific concept being popularized. In contrast, both scientist and popularizer tend sometimes to regard science as too, too horribly important simply on account of these considerations.

The popularizer of the present, who is often contrasted unfavorably with Thomas Henry Huxley, may defend himself in part by replying that Huxley's arguments were cast against a biblical background, that Huxley's audience knew their Bible, and that the subject he discussed is said to have been of the strongest personal interest to every reader or listener. On the contrary, in our own time, partly because the subject matter of science has increased so greatly, there is no simple and well-understood matrix into which its applications may readily be fitted.

Present-day analysts of national affairs, for example, have had ground broken for them by the public schools and the colleges, which have at least exposed students to the history of their country. But only the slightest fraction of this country's readers has ever received a formal training in the history and the issues of science. The writer of science popularization, therefore, ought to teach his history as he goes along. All too often he himself lacks the knowledge wherefrom to teach.

This deficiency is unfortunate because it thus greatly complicates the labor of writing science popularization and also because, in so far as it tends to lead the reader to think of scientific events only in terms of those most recent, it works to the disadvantage of reader, of scientist, and of writer. Practically any scientific development of sufficient importance to occasion its being popularized is the culmination of a long series of prior developments often seemingly unrelated, yet nevertheless contributing organically to the consummation. Indeed, that event which the headline writer of today often regards as the complete, climactic last step in such a series turns out within the week to be but another intermediate stage in a progression whose continuation is already resumed.

For this reason the practice of regarding science as a source of "spot news" stories is dangerous, and, other things being equal, the best treatment which a daily newspaper can give is through the daily column or the weekly department, which has a slightly better chance of making plain the continuity of the events with

which it deals than does the "one-shot" news story, which applies a technique well adapted and better reserved to arson, horse racing, and sudden death.

This lack of perspective, originating in the lack of historical knowledge, prevents proper recognition of the fact that most science, as well as being continuous, is co-operative; most achievements involve the efforts of a group or groups of workers. Lacking a sense of the time sweep and laboring under the journalistic exigency that names make news, the popularizer often tends so to identify a scientific achievement with a single person as to work injustice to that scientist's collaborators, to give readers an inaccurate report, and to place the scientist in the unlovely position of being an apparent

publicity seeker. Though the story thus composed possesses more of human interest perhaps — has been in a sense "glamorized" by the use of a personality technique having far too many resemblances to the high-pressure treatment of be-whiskered and laboratory-coated "investigators" on street-railway advertising placards — no one profits.

If the would-be popularizer confined himself to presenting mere simplified statements of essential facts, it is a fair presumption few

would read his work — not many more than would read the multiplication table. Facts by themselves are not meaningless, of course; but facts by themselves (other than weather or stock-market reports or election returns) compel so little active interest that they cannot compete successfully for attention in the tumultuous arena of the reader's mind.

The popularizer of science hence is under the necessity of interpreting in some measure the factual residuum which he has mentally distilled from observation, research, and interview. What that interpretation shall be, which one of several possible springs shall actuate it, depend upon the group whom he addresses and the medium — newspaper, magazine, book — which he employs. A first condition of sensible interpretation is clarification and definition of the factual residuum itself. And here rises a confusion too often ignored: The term "research" is now used loosely to describe any type of advance in science or industry, whether it be a fundamental contribution to knowledge or an improvement in a machine through shop testing and development — even routine testing or analysis has been so classified in more than a few institutions of so-called higher learning.

Discussing clarification of research in *Science and Social Needs*,* Julian Huxley says:

"... I have come to the conclusion that the simple alternative of pure *versus* applied is quite inadequate. You want at least four categories. At one end is *background* research, with no practical objective consciously in view — like atomic physics, or experimental embryology. (Continued on page 41)

* Harper & Brothers (1935), p. 253.

NOWADAYS a special consideration seems to be reserved for those authors, painters, or musicians whose work is both diffused and confused. Is this to be interpreted as a need for profundity in us, which, unable directly to gratify itself, finds in such obscurity its illusory substitute? Softening down has charm. And, after all, there is nothing much wrong with obscurity if the thought is of secondary importance. Lovers of real thinking sometimes read scientific works. But disillusion awaits them, for because they are so little read, thinkers have made less and less effort to be readable. Thus they have got into the habit of using a special language, which renders their writing quite opaque to the majority of readers. The wisdom and authority of the scientist, the philosopher, hardly extend beyond the immediate circle of those who specialize in the same subject. They are like prisoners who communicate by the merest signs. — Ozenfant, *Foundations of Modern Art* (Harcourt, Brace and Company, Inc., 1931), pp. 39–40.

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

The President Reports

THE relation of the Institute to the national defense program, in which it is co-operating through research and special technical courses given for the benefit of government and industry, was discussed at length by President Compton in his annual report, presented to the Corporation at its meeting on October 9. In addition to the research and educational program now under way at Technology, Dr. Compton announced that many members of the staff are engaged in vital programs of preparedness at Washington and other centers of government activity.

After recalling the objectives for which the Institute was founded and emphasizing the contributions of engineers and scientists in the industrial development of the nation in times of peace, Dr. Compton continued by saying that "in a time of military crisis, technological efficiency in production, as well as in the design of instruments of defense and offense, is the basic element of national defense.

"Protection of the Western Hemisphere, and especially of the North American continent, against any possible invasion by force is the firm determination of all true Americans," said Dr. Compton. "Equally important, and more difficult, is defense of the freedom of spirit and action which our forefathers won for us by generations of struggle and which is stealthily threatened alike by subversive influences from without and vicious ambitions from within. Both tend to undermine our strength by sowing doubt and discord. Sometimes these influences operate insidiously in the guise of high idealism, as in the cause of peace or of human rights; sometimes they operate openly to incite violence and class hatred.

"Research work on national defense problems," the President reported, "is being conducted in many of the Departments of the Institute. Most of this is through contracts with the War and Navy departments, the National Advisory Committee for Aeronautics, the National Defense Research Committee, the National Academy of Sciences, and with private companies engaged in development of equipment for military purposes.

"Members of the Institute's staff are serving in a variety of national defense agencies; some have been granted leaves of absence and others have been relieved of a portion of their Institute duties to make this defense work possible. Robert G. Caldwell, Dean of Humanities, is serving as chairman of the Division of Cultural Relations among the American Republics, a post he has taken at the request of President Roosevelt. Professor Ralph D. Bennett of the Department of Electrical Engineering, Francis Bitter, Associate Professor of the Physics of Metals, and Doyle L. Northrup, '31, of the Department of Physics are on leave to carry on

an important research program for the Navy, while Chester M. Van Atta, Assistant Professor of Physics, and Richard D. Campbell, '35, of the Department of Biology and Public Health resigned from the staff to work on this project.

"Jerome C. Hunsaker, '12, Head of the Departments of Mechanical and Aeronautical Engineering, is a member of the National Advisory Committee for Aeronautics and is participating in the aeronautical research programs conducted for the Army and Navy by that committee. Through membership in many other boards and committees in Washington, he is further aiding the defense program. Walter G. Whitman, '17, Head of the Department of Chemical Engineering, is chairman of a subcommittee of the National Advisory Committee for Aeronautics. Edward S. Taylor, '24, Associate Professor of Automotive Engineering, has been the chief assistant to George J. Mead, '16, who is in charge of airplane engine production under William S. Knudsen, head of the National Defense Advisory Commission.

"John E. Burchard, '23, Director of the Bemis Foundation at Technology, is in active charge of a group of scientists and engineers responsible for the development of special types of shelters. Douglass V. Brown, Associate Professor of Industrial Relations, is head of the division of economics and statistics for the Stettinius committee; his colleague, Douglas M. McGregor, has been called from time to time to undertake special assignments for the Bureau of Labor Statistics.

"The National Defense Research Committee, under the chairmanship of Vannevar Bush, '16, formerly Vice-President and Dean of Engineering at M. I. T., has presently available a large fund for research on devices and instruments of warfare. In charge of the committee's four divisions are Frank B. Jewett, '03, Richard C. Tolman, '03, James B. Conant, President of Harvard University, and myself. Among the committee's section chairmen are Alfred L. Loomis of the Corporation, Professor Warren K. Lewis, '05, of the Department of Chemical Engineering, and Professor George R. Harrison of the Department of Physics; and on the operating section committees are Professor Tenney L. Davis, '13, of the Department of Chemistry; Thomas K. Sherwood, '24, Associate Professor of Chemical Engineering; Professor Edward L. Bowles, '22, of the Department of Electrical Engineering; and Samuel H. Caldwell, '25, Associate Professor of Electrical Engineering. These are only some of the present national defense activities of the staff. Many others also will undoubtedly arise in the near future.

"In my report last year, as the European war was just beginning," Dr. Compton told the Corporation, "I submitted my opinion that the Institute's greatest service, in threat of war as in time of peace, is to continue as efficiently and uninterruptedly as possible its program of technological education and scientific

research. That opinion still holds, but the progress of events has called for some new definitions of policy and modifications in procedure. Where we possess facilities of personnel or equipment which can contribute in especially significant ways to the national defense program, we should direct them to this effort, always guided by our best evaluation of the national importance of this effort in comparison with other ways in which these same personnel and facilities might be used. We should make this contribution possible by postponement of less urgent research projects, by internal rearrangement of teaching schedules, and by carrying a more than normal per capita burden of work."

Reporting on measures which have an important bearing on the nation's preparedness program, Dr. Compton stated that in addition to scientific and engineering research, special courses in various significant fields have been given and others are expected to follow as the need arises. "One of these," he said, "was an intensive course for junior aeronautical engineers. Fifty-one graduates from engineering schools in northeastern United States were accepted for this ten weeks' course without tuition. The success of the program has led to requests by aircraft companies that the course be repeated and that similar training be offered in other fields. Congress has under consideration an appropriation of \$9,000,000 for financing short intensive courses in engineering schools. Technology is continuing to participate in the civilian pilot-training program and is planning to speed up the ground-school program during the current academic year.

"Weather forecasting is an essential feature of modern warfare. For a number of years the Institute has been giving postgraduate training in meteorology to young men of the Army, Navy, and the United States Weather Bureau. This summer a special intensive course was given to recruits for the meteorological service of the Army Air Corps. During the current academic year, training in this subject will be given to another special group of approximately sixty-five postgraduate students, mostly from the Army Air Corps and the Weather Bureau. With these additions, the Institute has had a threefold increase in the number of graduate students studying meteorology.

"Realizing fully that present conditions make it more important than ever that the Navy keep abreast of advances in science and engineering and that its officers have the best possible technical training, the Navy Department is sending an increased number of officers for postgraduate study at the Institute. At the Navy's request there has been established a new course which combines the separate courses in naval construction and naval engineering into a single co-ordinated program. Of the sixty officers detailed to Technology, forty are taking this three-year program and the remainder are distributed among other courses. As the need arises the Institute is preparing to start intensive courses in naval construction and aircraft instruments for special groups of officers.

"The Wright Brothers Memorial Wind Tunnel is in overtime use for the testing of design models of new types of airplanes. With funds provided by two air-



From across the Charles on a placid day this fall — the Institute, with the Graduate House at the left and Walker at the right

M.I.T. Photo

craft companies, important new equipment is being added to this laboratory to permit tests on models with power applied to propellers, thus more closely simulating flight conditions."

Dr. Compton reported that the Class of 1940 was more than 90 per cent placed by September 1 and that the men had found employment in thirty states. A number of those not placed included graduates who are entering private consulting or architectural practice.

Among the urgent needs of the Institute, Dr. Compton told the Corporation, is a new building for the Department of Chemical Engineering, the largest in the Institute, which is now greatly overcrowded. Plans for such a building, he added, have already been drawn, and if the necessary funds can be obtained, the new quarters will relieve congestion in a large part of the educational buildings on the eastern side of the Institute. He also drew attention to the need for new biological laboratories and the opportunities that could be realized by an increase of \$200,000 or more a year in research funds. A large waiting list, he said, is evidence of the need for an additional dormitory unit, which could be immediately filled.

Registration

WITH a total enrollment of 3,095 students, an increase of 45 over the opening day last year, the Institute opened its seventy-fourth academic year on September 30. This year's freshman class numbers 610, and the total registration in the second, third, and fourth years is 1,748. The Graduate School has an enrollment of 737 students, which includes 65 registered in a special course in meteorology. Ten of these came from the United States Weather Bureau in Washington, and the remainder are being trained for the United States Army Air Corps. The latter are college graduates who majored in physics, mechanical engineering, or chemical engineering. Upon completion of the course next June, they will enter the Army with the status of flying cadets, and all of them will be required to serve in the Air Corps for at least one year.

James Flack Norris, 1871-1940

AT his death on August 3, Professor James Flack Norris left rich memories of an outstanding, happy personality and of a very successful career as a teacher and investigator in chemistry. From the time of his appearance on the staff of Technology in 1895, the year he received the doctorate at Johns Hopkins University, until his death, his path was marked by devoted students and friends. Even while he was away for eleven years building up the department of chemistry at Simmons College as its first professor of chemistry, he retained his association with earlier friends. Many women students of the science, moreover, still acknowledge a debt to him.

It was quite natural that the Institute should call him back in 1916 from Vanderbilt University, where he had gone for a year, and make him professor of general chemistry. In the next year, however, he entered upon a leave of absence which lasted until the close of the



M. I. T. Photo

James Flack Norris

World War. By the time of his return in the fall of 1919, he had added to his credit important successes while in charge of the research in chemical warfare conducted by the United States Bureau of Mines and had attained the rank of lieutenant colonel.

In 1920 Professor Norris gladly became professor of organic chemistry, the field where his greatest interest lay and where accomplishment was to be the largest. "This is the kind of a job I have always hoped for," he told his friends. He applied himself to building up the Research Laboratory of Organic Chemistry and, as the years passed, could take pride in the growth of that phase of his work. Formal establishment of the Research Laboratory of Organic Chemistry in 1926 came as a crown to his efforts.

Dr. Norris was born in Baltimore, Md., on January 20, 1871, the son of the Rev. Richard Norris and Sarah Amanda Baker Norris. He used to tell interesting stories of traveling about with his father to lead the singing — he had a clear baritone voice — when his father was on a preaching tour. At twenty-one years of age he was awarded the degree of bachelor of arts at Johns Hopkins. Three years later he received the doctorate of philosophy in chemistry, after completing the necessary graduate studies and a thesis under the direction of Ira Remsen.

Always active in various scientific societies, Dr. Norris became chairman of the Northeastern section of the American Chemical Society in 1905. He rose

steadily in the esteem of his fellow chemists throughout the country, being elected to the important position of president of the American Chemical Society for the period 1925-1926. For a number of years he was one of the associate editors of the *Journal of the American Chemical Society*. In the years 1906 to 1908 he served as the sixth president of the Chemistry Teachers' Association of New England.

Dr. Norris received many honors. He was a fellow of the American Academy of Arts and Sciences and of the American Association for the Advancement of Science, and was a member of the National Academy of Sciences. He was an honorary member of the Royal Institution of Great Britain and of the Chemical Society of Rumania. In 1929 Bowdoin College conferred on him the honorary degree of doctor of science. The American Institute of Chemists in 1937 awarded him its medal for distinguished service to chemistry.

Four textbooks were written by Dr. Norris: *The Principles of Organic Chemistry*, *Experimental Organic Chemistry*, *A Textbook of Inorganic Chemistry for Colleges* (revised in 1938 with Ralph C. Young, '29), and *Laboratory Exercises in Inorganic Chemistry* (of which K. L. Mark is joint author). He published about seventy-five scientific papers and a score or more of general articles.

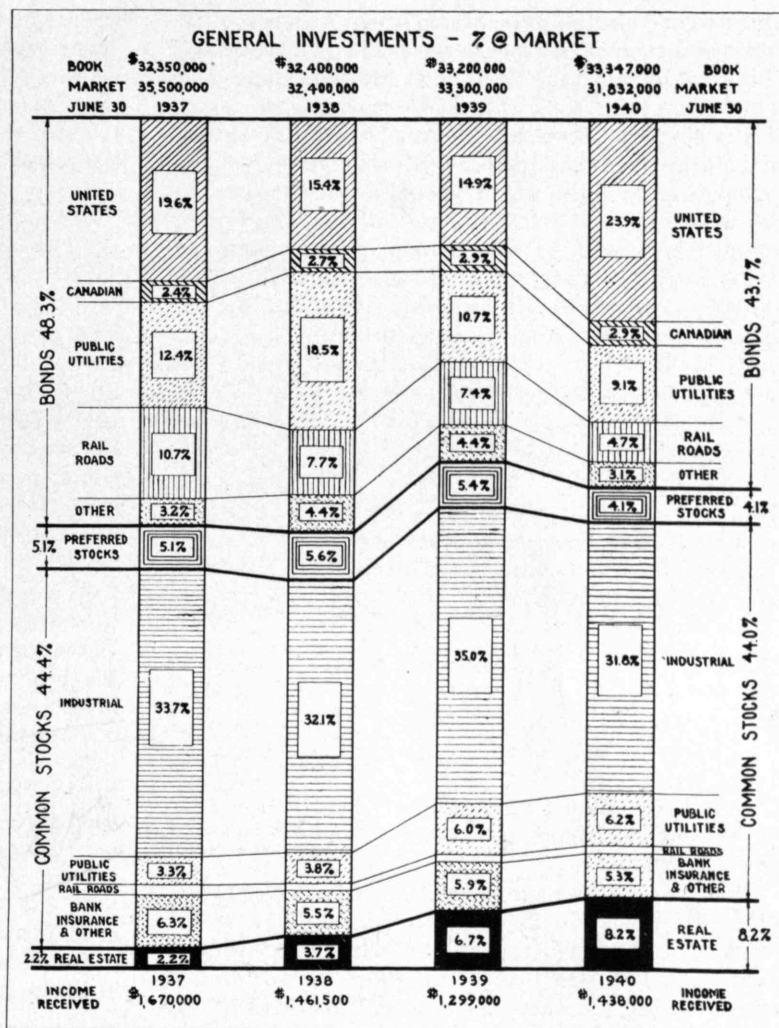
In 1902 he married Anne Bent Chamberlin of Washington, D. C. They made their home at 290 Commonwealth Avenue, Boston. For a dozen years or more they spent their summers in a very attractive cottage on Long Lake at North Bridgton, Maine.

— AVERY A. ASHDOWN

George Rutledge, 1881-1940

GEORGE RUTLEDGE, Professor of Mathematics, died at his home in Belmont on September 21. He will be remembered by his students as a painstaking and impressive teacher and by his colleagues as a tireless worker who was always willing to help both the younger members of the staff and his students in their pursuit of knowledge in his particular field, that of mathematical analysis. He was always exact and rigorous in the teaching of his subject and expected the same exactness of expression from his students. He was instrumental in establishing a policy of uniformity of treatment of undergraduate students, and many of his methods and suggestions are now being followed in the handling of the first- and second-year programs in Mathematics.

Professor Rutledge was born in Jacksonville, Ill., on December 18, 1881, and received his early education at Whipple Academy. He attended the University of Illinois, where he received the degree of bachelor of arts in 1910, the degree of master of arts in 1912, and that of



Fiscal 1940 — the Institute's investments summarized

doctor of philosophy in 1915. Joining the staff of the Institute as an instructor in mathematics in 1915, he was promoted to the rank of assistant professor in 1923 and to that of associate professor in 1929, and was made professor of mathematics in 1934.

Professor Rutledge was a fellow of the American Academy of Arts and Sciences, and held membership in the American Mathematical Society, the Mathematical Association of America, the Association of University Professors, and the Society of Sigma Xi. He was the author of the textbook *Fundamental Topics in the Differential and Integral Calculus* and published many papers on numerical differentiation, interpolation, summation of series, and evaluation of definite integrals.

— RAYMOND D. DOUGLASS

Fiscal 1940

By HORACE S. FORD

OPERATION of the Institute for the year ended June 30, 1940, was within the Institute's budget — in fact, very much within the budget. It was not necessary to use any part of the \$40,000 Income Equalization Fund or the principal of the Chemical Engineering Practice Fund or of the Sedgwick Fund, all three of

which were expected to be drawn upon. As a result, the excess of income over expense was held down to \$945.67. This sum, added to the profit of \$4,782.35 from previous years' operations, brought the current operating surplus from the almost shrinking-violet total of \$516.85 of the preceding year to \$6,244.87 as of June 30, 1940.

And that isn't the whole story. Several Department Heads, working in full co-operation with the budget committee, agreed to reserve out of their appropriations for the 1940 year, balances approximating \$15,000, so that actually something over \$21,000 was left after the year's work was completed.

In tabular view, income and expense for the last two years compare thus:

	1940	1939	Increase or Decrease for 1940
<i>Income</i>			
FROM: <i>Students</i>	\$1,817,000	\$1,800,000	+ 17,000
<i>Dormitory operations</i> ..	39,000	40,000	- 1,000
<i>Investments</i>	1,231,000	1,126,000	+105,000
<i>Other</i>	247,000	237,000	+ 10,000
	\$3,334,000	\$3,203,000	+ 131,000
<i>Expense</i>			
<i>Educational</i>	\$2,309,000	\$2,234,000	+ 75,000
<i>Administrative and plant</i> ..	881,000	840,000	+ 41,000
<i>Other</i>	143,000	134,000	+ 9,000
	\$3,333,000	\$3,208,000	+ 125,000

The total educational expenses were slightly more than 70 per cent of income, an increase of about 1 per cent over a year ago.

From the total amount received for tuition, \$1,809,000 — \$17,000 more than a year ago — \$207,000 was provided by the Institute through scholarships (\$3,000 more than last year) and \$141,000 through student loans (\$6,000 less than last year). The ratio of the amount provided by the Institute through scholarships and loans was maintained at the figure of the past two years, approximately 20 per cent.

The Institute's endowment funds decreased \$217,000 and now stand at \$36,000,000. Capital gifts and additions for the year were \$465,000 but were offset by payments from funds for new construction and by decreases in the Endowment Reserve Fund and in the Technology Loan Fund on account of investment adjustments.

A résumé of capital gifts for the last few years follows:

1936	\$ 312,000
1937	652,000
1938	2,134,000
1939	1,131,000
1940	465,000

In the investment summary as of June 30, shown by the graph on page 29, the principal trend has been toward a considerable increase in holdings of United States Government bonds, a moderate decrease in public utility bonds, a sharp decrease in railroad bonds, and some reduction in industrial and other stocks. There was also a considerable increase in real estate holdings. The figures at the bottom of the graph show a substantial increase (\$139,000) in income from general investments over that of the previous year despite little change in the capital account. The amount distributed to the

pooled or general investments was 4.38 per cent, contrasted with 4.02 in 1939 and 4.55 in 1938. The yield on all investments at market as of June 30 was 4.32 per cent, as against 3.89 last year.

From the Technology Loan Fund Committee comes the following report:

<i>Cash</i>	\$ 2,197.50
<i>Investments</i>	724,717.72
<i>Student notes receivable, less repayments</i> ..	885,629.29
	\$1,612,544.51

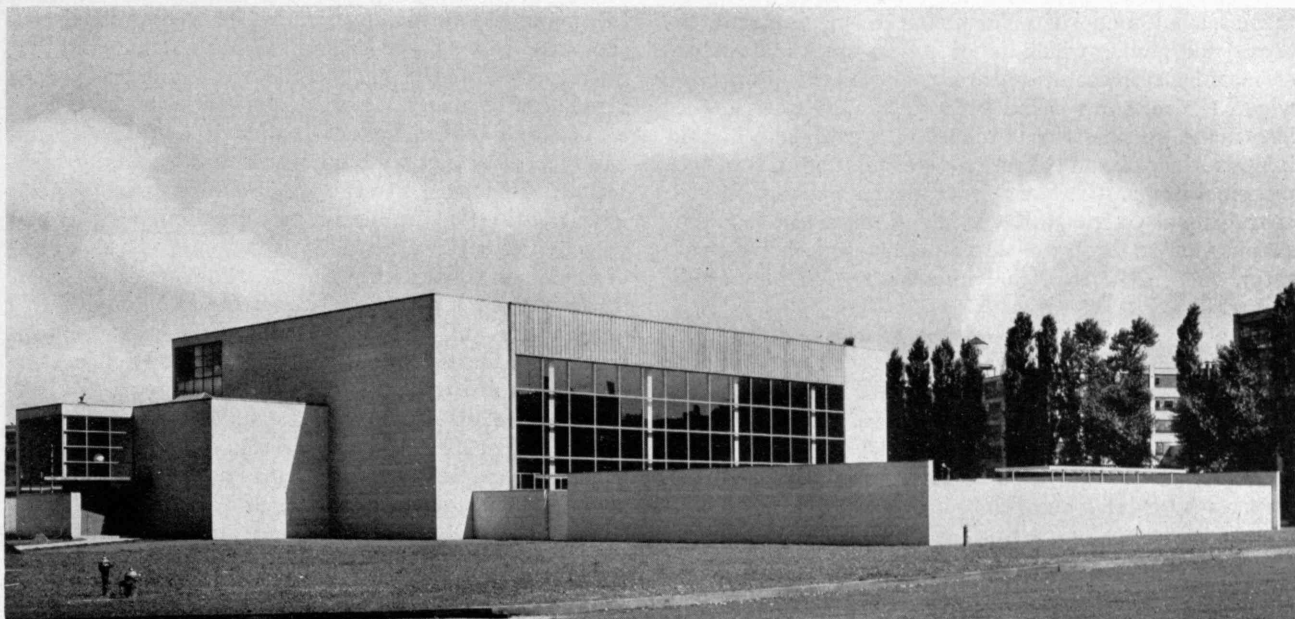
This total contrasts with \$1,753,865 a year ago, a difference largely occasioned by a write off of \$184,000 by the sale of certain securities. The market value of the securities held in the Loan Fund list was about \$100,000 less than the \$724,717 referred to in the foregoing breakdown, so that the assets at market as of June 30 were approximately \$1,512,000. This is an improvement over last year's comparative figure of \$1,430,000.

The total amount loaned to students last year was \$162,800, compared with \$167,000 the previous year. The amount of principal and interest collected during the year was \$118,000, as against \$116,800 the year before. The net cost of the group life insurance policy covering all outstanding loans was \$3,242. It was necessary to draw upon the cash and invested assets of the fund to the extent of \$48,000, a decrease of \$9,000 from the figure of the year before. The draft on the principal of the fund should be considerably reduced during the present year. The advance in tuition two years ago, with the corresponding increase in loans made, occasioned the considerable drafts in the past two years.

Operations of the Loan Fund for the decade 1930-1940 are summarized below:

<i>Total loans (1930 to 1940)</i>	\$1,483,000
<i>Repayments</i>	597,000
	\$ 886,000 (\$824,000 last year)
<i>Total loans outstanding, June 30</i> ..	
<i>Total number of debtors</i>	2,143
<i>Number paid in full</i>	— 739
<i>Present debtors</i>	1,404 (1,357 last year)
<i>Maturities</i>	
(a) <i>To June 30, 1940</i>	\$517,000
(b) <i>Paid on above</i>	443,500 86% (84% last year)
(c) <i>Extended (probably good)</i>	25,500 5% (7% last year)
(d) <i>Past due</i>	48,000 9% (9% last year)
(e) <i>Paid in advance</i>	153,000 29% of maturities (29% last year)
(f) <i>Interest paid</i>	110,000

The report of the trustees of the M.I.T. Pension Association shows total assets of \$1,419,000, contrasted with \$1,333,000 last year. The total investments were \$1,381,000, of which the market value was \$1,280,000. Twenty-one per cent of the investments are in government bonds, 54 per cent in rail and utility bonds, and 25 per cent in industrial common stocks and bank stocks. The income allocation over both six months' periods was the same, $3\frac{3}{4}$ per cent. This figure contrasts with $3\frac{1}{2}$ per cent for the first six months of the fiscal year 1939 and 4 per cent for the second. The association's reserve accounts received their triennial actuarial checkup during the past year from John L.



M.I.T. Photo

The Alumni Pool Building completed, with the wall surrounding the Class of 1923 garden, before exterior landscaping began

Stearns, actuary of the New England Mutual Life Insurance Company. Adjustments have been made to meet actuarial requirements indicated by him, and the special reserves for the annuity payments that the association is making directly to retired members are deemed adequate as set up. The Reserve Fund over and above such requirements stands at \$19,000, and the Teachers Insurance Special Fund, which may be regarded as a further reserve, now stands at \$97,000.

As was true last year, all dormitories, including the Graduate House, were filled to capacity, and the undergraduate system showed a profit almost exactly the same as last year, approximately \$40,000 (3 per cent). The Graduate House in its first full year earned the 2½ per cent that was expected upon the investment and, in addition, yielded the modest amount of \$3,500 for depreciation.

The Graduate House dining service in its first full year served 272,000 meals, with receipts totaling \$98,000. At the end of the year it had exactly \$176.89 to carry into the Institute's profit and loss account — not much return for a good deal of effort. The graduate students, members of the staff, and others who have had occasion to use this service during the past year would probably agree, however, that the effort was worth while.

The Walker Memorial dining service served over 400,000 meals (including over 50,000 at special dinners), had total receipts of \$150,000, paid the Institute \$1,000 for occupancy, and set aside \$2,500 to its own reserve account, a part of which has been expended for a very attractive soda and luncheon bar, which is now open from eleven in the morning until after midnight. It is thus available for the midnight snacks of the dormitory students and will be particularly useful at the various dances and other functions that make Walker one of the busiest Student Unions in the country. The Walker

Memorial dining service has been no expense to the Institute for maintenance, additions, or improvements since 1921.

Hart Museum

THE Institute's excellent nautical museum has been given the name of Francis Russell Hart, '89, who, as a member of the Corporation, contributed much to the growth of the museum. With the opening of the Pratt School of Naval Architecture and Marine Engineering in 1921, the Institute possessed its first museum, although the founders had included a museum of arts in their original plan in 1861. A small committee of the Corporation, under the chairmanship of Mr. Hart, took charge of the equipment and organization of the museum, and the Head of the Department of Naval Architecture and Marine Engineering was appointed curator. Little material was available at first, but a loan collection of ship models was obtained from the Navy, and the collection began to grow.

The Arthur H. Clark collection, bequeathed to the museum in 1922, contains a large number of excellent prints, some of which are very rare and valuable, requiring expert care. Here Mr. Hart's familiarity with prints was of great value in assuring that the treatment given was the best for their preservation. His extensive knowledge of American history, literature, and prints was also of the greatest service in preparing a reference index. The museum's collection continued to grow, and Mr. Hart's knowledge was freely drawn upon for information and advice, especially as to the historic value of each new item. His literary connections with Latin America, Madrid, and London were also very helpful in dealings outside the United States.

Mr. Hart, whose death occurred in 1938, also contributed to the collection in a material way. A full model of a passenger and cargo ship for trade in the

tropics, a half model of a Norwegian steamer, and a large terrestrial globe, which is of much use to students of marine transportation, are a few of the items for which the museum is indebted to him. His assistance also made possible the purchase of a catalogue of the famous Macpherson collection, with photographs of the principal items. Mr. Hart's enthusiasm was a great encouragement to the staff, so that it is a cause of much satisfaction to Professor James R. Jack, honorary curator, and to the staff that his memory is so honored.

Visiting Committee Reports

SURVEY and understanding of education as the Institute seeks to impart it are made available through the periodic reports of Departmental Visiting Committees, summaries of which The Review publishes yearly. Reports by three Committees are presented below.

DEPARTMENT OF AERONAUTICAL ENGINEERING *

MATTERS considered at the last meeting were reviewed by the Committee, who noted with satisfaction that their recommendations regarding Civil Aeronautics Authority flight training, honors course for outstanding students, and department status for Course XVI had been adopted.

The plans for alterations to Building 33, involving a cost of about \$65,000, were approved; the Committee recommend that the work proceed immediately in order to permit the Department to contribute to the national defense program. [These recommended alterations have now been carried out.] The plans that were approved were substantially the same as those recommended the two last years, but with some additions caused by the present national and international situation, which has increased the already very great demand for the services of engineers. Twice as many places are available for our engineering graduates as there are men to fill them.

The Committee noted with thanks and appreciation the gift of \$100,000, from Alfred P. Sloan, Jr., '95, for the expansion of automotive engineering and an addition to the Sloan Laboratory.

We have had very satisfactory co-operation from the Civil Aeronautics Authority in flight training. Twenty were trained last year, and sixty are to be trained this year. There has been good co-operation also with the United States Weather Bureau in meteorology and long-range weather forecasting, resulting in a method which gives pretty good forecasts for four or five days ahead. These are published by the Blue Hill Observatory.

DEPARTMENT OF BUSINESS AND ENGINEERING ADMINISTRATION †

DURING the past year a special committee was appointed by the Chairman to make recommendations, observations, and conclusions concerning the

* Members of this Committee for 1939-1940 were Godfrey L. Cabot, '81, Chairman, W. Cameron Forbes, Chandler Hovey, '02, Frank W. Caldwell, '12, Theodore P. Wright, '18, Edward A. Deeds, and George W. Lewis.

† Members of this Committee for 1939-1940 were John R. Macomber, '97, Chairman, Alfred P. Sloan, Jr., '95, Robert C. Erb, '17, Raymond Stevens, '17, Edmund C. Mayo, Carl T. Keller, and Roy A. Young.

future policies of the Department. This committee, consisting of Mr. Mayo, Chairman, Mr. Keller, and Mr. Stevens, reported in part as follows: "There is . . . a great need for men trained adequately for management, and the committee feel that so far no educational unit has met this need with optimum results. Many institutions give business training, but almost no institutions give training in business administration adequate to present needs. Because of the comparatively small size of the Business and Engineering Administration Course at the Institute, because of its setting in an engineering atmosphere and its sound accomplishments to date, there is an unmatched opportunity here to concentrate on the training of competent executives.

"To specialize in the education of able executives would require, first of all, a selection of student material even more careful than that already afforded by admission to the Institute and the quota established by the Course. The Department should aim for quality and there is no need for the Course to be larger; it might preferably be smaller.

"In order that the Department's program may be of maximum effectiveness, it seems essential to the committee that both staff and students be brought into intimate contact with industry. For members of the staff, such contacts can be developed in several possible ways. One that appeals especially to the committee is the possibility of effecting an exchange arrangement with some of the outstanding consulting firms in the field of management. If such a firm were to take one of the department staff to work for a period with its organization, and were to send in exchange a member of its staff to assist in the work of the Department at the Institute, we feel that much would be gained by both the firm and the Department. The Institute staff member who participated in such an exchange arrangement would be able to make many contacts, would see at first hand some of the problems and methods involved in management, and would, incidentally, develop placement opportunities for graduates of the Course. The exchange should likewise be beneficial and stimulating to the representative of the management firm, who would come to know intimately the work and the men, both staff and students, in the Course.

"Another possible method of developing contacts between industry and the staff would be to continue the work already started by the Department in the collection of cases or business problems. Companies might be stimulated to send their problems to some confidential office at the Institute. These problems might then afford members of the staff an opportunity to go out and confer with the businessmen and industrialists in the companies from which the problems came.

"Students, as well as staff, would benefit from systematic contact with industry. The exchange proposal described above would be of value to students, as is the Department's present policy of bringing in men from the outside to talk with students or to consult with them. The committee, however, envision a more comprehensive plan which would be analogous to that used in the Course in Chemical Engineering, whereby carefully selected students spend a period at a practice-school station located in a chemical plant. As in Chem-

ical Engineering, this plan would involve the selection of outstanding students. Only those whom the Department judged to be of superior promise as executive material would be chosen to take the practice-school work. The plan, of course, would involve an extra year of work and presumably would lead to a master's degree. It would be of fundamental importance that the students taking the practice-school work have an opportunity to come in close contact with successful and active men in the management field. The student should have a chance to be upon the bridge and should not be relegated to some specialized job where he cannot see policy in the making. The success of the practice-school program would depend upon students' being able to watch management in action.

"Since the group selected for the practice school would not be large, the committee feel that it would be entirely possible to find in the metropolitan Boston area a group of companies willing to co-operate. By selecting companies in an area contiguous to the Institute, the Department could supervise the students and bring them together at frequent intervals.

"In conclusion, may we emphasize that we are more interested in the objectives behind the suggestions in this report than we are in the specific suggestions themselves; there may be better pedagogical ways of obtaining the objectives than we have proposed. We do believe, however, that the Department and the Institute are in an admirable position to take a significant step in the selection and education of men destined to become first-rate executives and that the training of such executives should be the major focus of the Department."

The Committee have unanimously approved this report and recommend (1) the organization of systematic contacts between teaching staff and industry; (2) the

establishment of a practice program for selected students; (3) the maintenance of close relationships between the Department and its Alumni; and (4) the raising of standards of selectivity for entering students.

DEPARTMENT OF ENGLISH AND HISTORY *

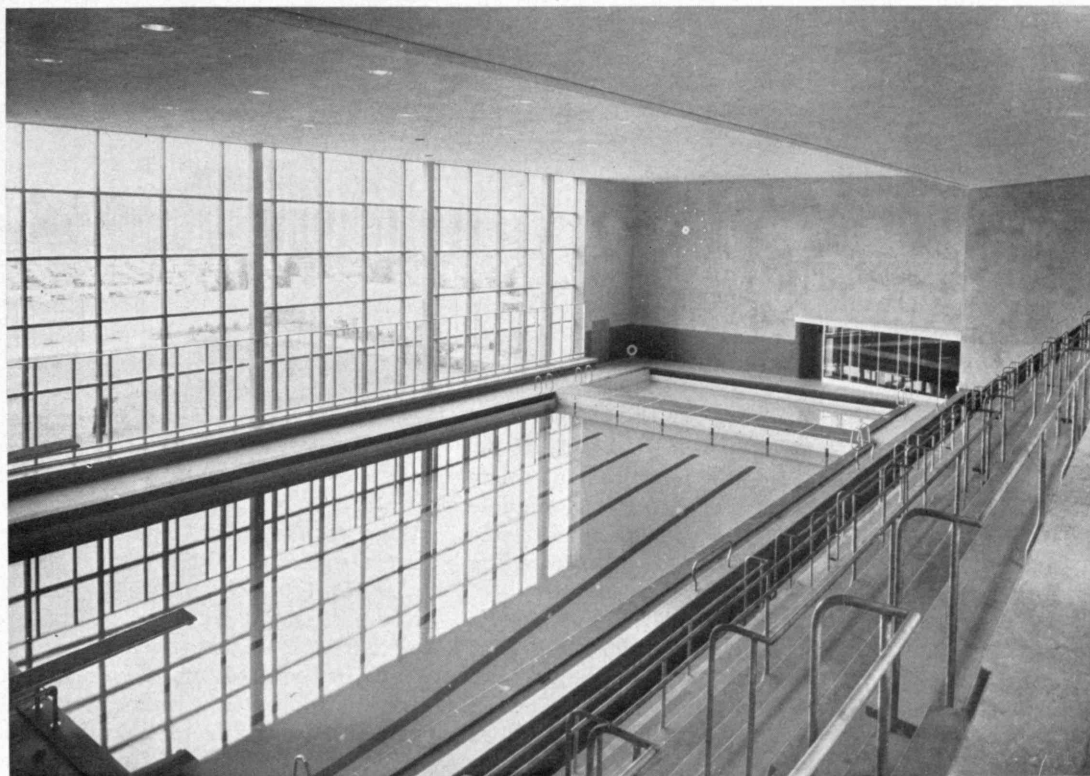
PROFESSORS in charge of the different options described their work and objectives in detail to the Committee, who were impressed with the program and recommended only that the Department consider reducing somewhat the emphasis on modern literature and history in order to afford opportunity to deal to a somewhat greater extent with classical and medieval literature and history.

At the present time all students make several short talks in the freshman course in composition. A general study in public speaking is offered in the second term, and the course in report writing and the general study in biography and science also stress oral presentation. After the first year, however, this program reaches only a limited number of men. The Committee noted with satisfaction the interest in, and emphasis on, oral presentation but recommend that arrangements be made if possible for oral presentations before larger groups than those of the classroom and that the use of reproducing equipment for remedial work for those of poor speaking ability be undertaken and such equipment purchased as soon as feasible.

The plan for a roving instructor in English, which has been approved by the Corporation, calls for a man who has not only a training in the (*Concluded on page 46*)

* Members of this Committee for 1939-1940 were Marshall B. Dalton, '15, Chairman, William H. Bovey, '94, Rufus E. Zimmerman, '11, Laurence C. Hart, '13, Eric F. Hodgins, '22, Dixon R. Fox, and Howard M. Jones.

Reflecting the giant lattice of the great window and its inner screen of glass, the large pool in the Alumni Pool Building is unruffled as pictured here. Both its waters and those of the smaller pool beyond are well tossed at present, as students flock to make use of them.



M.I.T. Photo

THE TECHNOLOGY OF GUTENBERG

(Continued from page 19)

But it is clear, from the testimony of several writers, that oil paints were known and used before that date. The artists' varnish-base paints needed but slight modification to become satisfactory ink for printing with metal types, so that this requirement probably caused Gutenberg slight difficulty.

In order to obtain a firm, even impression from a whole page of types, some form of press was essential. And, as considerable pressure must be exerted to impress the sheet of paper against the inked types, it was obvious that a screw press would best meet the requirements.

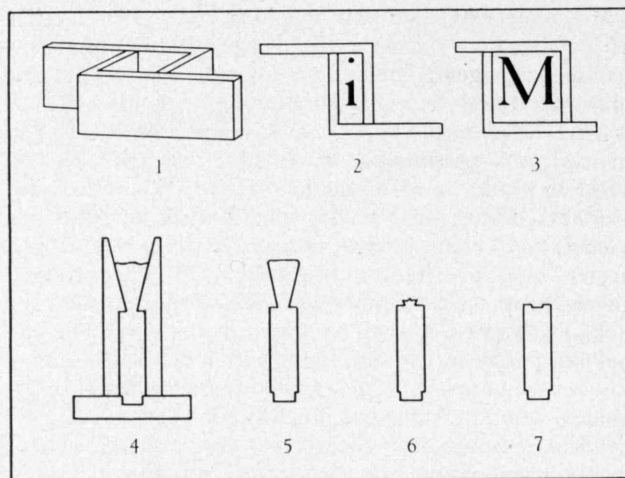
Screw presses were in use in a number of crafts, at least three of which were closely related to the printing of books — papermaking, bookbinding, and textile printing. The manufacturer of paper used a press to expel moisture from piles of damp sheets. The binder used similar equipment to press and hold flat the newly bound books with their yet damp covers. The use to which a screw press was put by the textile printer is obvious.

From this review of the industrial background of Gutenberg's invention, it will be apparent to the technically trained reader that the most difficult problem was the making of punches, the driving of matrices, and the casting of types of accurate quadrature and uniform dimensions. The most elementary steps undoubtedly taken by the inventor have already been described. Further refinements and improvements in the process were urgently needed. Most important of these was an adjustable type mold, at the bottom of which the matrix could be placed and into which the molten lead or type metal could be poured.

All types of a given size or design are necessarily of the same height, but the widths vary greatly; hence a successful type mold need be adjustable in only one direction. If two L-shaped pieces of metal are placed with the short leg of one against the long leg of the other and are slid back and forth, they will form an aperture constant in height but varying in width. Here we have the essential feature of the type mold in use from the Fifteenth until well into the Nineteenth Century.

When Gutenberg or one of his associates added an overhang at the top of each L-shaped piece of the mold, the size of the opening through which the molten metal must be poured was cut down. But these overhangs served to form two jogs, or shoulders, at a fixed and invariable distance from the face of the type. When the jet which formed between these overhangs was broken off and a rabbit-plane cut was taken down the middle of the base of a row of types, the types were left ready to stand on the two feet, which were the jogs formed by the overhangs.

It is common belief that Peter Schöffer, Gutenberg's assistant in starting the printing of the *Gutenberg Bible*, changed the punches from brass to steel and the matrices from lead to copper. With these improvements the art of type founding was well established. It changed little during the next four centuries.



These illustrations, from *Wings for Words; the Story of Johann Gutenberg and His Invention of Printing* by Mr. McMurtrie with the collaboration of Don Farran (Rand McNally and Company, Chicago, 1940), show how type gets its feet. (1) Simplest form of type mold, composed of two L-shaped pieces. (2) Relative position of L-shaped pieces in casting of a narrow letter. (3) Relative position of same in casting of a wide letter. (4) Overhangs at top of mold to assure uniform height-to-paper and provide a jet which can be easily broken off. Cross section of letter matrix shown closing bottom of mold. (5) Piece of type, as cast in the mold, with jet still unbroken. (6) The piece of type after jet has been broken off. (7) The piece of type, with the rough portion caused by breakoff of the jet cut away, leaving (at the top) the feet as cast.

It is not my purpose to attempt to tell here the full story of Gutenberg's printing activities. Modern research has given us twenty-eight contemporary documents relating to Gutenberg, and we have derived much knowledge regarding his printing from painstaking study of that printing.

The story can, however, be briefly summarized. I believe the motive which led him to devote his life and his fortune to the quest for the one right way to produce books economically is revealed in the fact that of nineteen pieces of his earliest printing, before the production of the forty-two-line Bible, seventeen were different editions of the Donatus grammar used by every schoolboy. I believe this fact shows that his primary aim was to promote education.

When he came to undertake the printing of the Bible, the enterprise was so large that he had to seek outside financial backing. He secured a large loan from Johann Faust, a capitalist of Mainz, but used the money to continue to improve his process and hence did little productive work. When the first loan ran out, Faust advanced another large sum but insisted on measures of protection and control, and pressed for production. When results failed to please him, he foreclosed on the loans, squeezing Gutenberg out of the enterprise.

Faust took Gutenberg's assistant, Peter Schöffer, into partnership with him and pushed through to completion in 1455 the book we know as the *Gutenberg Bible*, or the *Bible of 42 Lines* because there were forty-two lines of type in each column of its double-column pages. A later Bible, with thirty-six lines in each column, which appeared about four years (Concluded on page 36)



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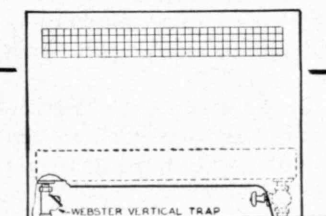
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THE TECHNOLOGY OF GUTENBERG

(Concluded from page 34)

later, is generally believed to have been printed by Gutenberg. But the latter's subsequent efforts did not prosper. To provide for the inventor's declining years, the archbishop of Mainz granted him a pension. At Gutenberg's death, probably early in 1468, a friend claimed the inventor's modest printing equipment which, the friend pointed out, "was and is mine." So Gutenberg apparently died without a piece of type to his name.

We cannot state the exact date of Gutenberg's invention. From documentary evidence, we know that his experiments with printing started at least as early as 1436, and there is preserved a fragment of his printing believed to have been produced in 1444 or 1445. The midpoint between these dates, 1440, seems a likely time for his process to have reached the stage when it became practicable.

Johannes Gutenberg gave mankind its most precious gift, the essential mechanism of enlightenment: printing. From his invention he earned no rewards in what the world counts as riches. But I am confident that he derived deep and lasting satisfaction from his observation of the eagerness with which a waiting world seized on his invention and put it to use for the benefit of young and old who worthily hungered for greater knowledge.

THE HUMANIZING OF ARCHITECTURE

(Concluded from page 16)

of the cones spread the light in millions of directions. Theoretically, for instance, the light reaches an open book from all these different directions and thus avoids a reflection to the human eye from the white pages of the book. (Bright reflection from book pages is one of the most fatiguing phenomena in reading.) In the same way this lighting system eliminates shadow phenomena regardless of the position of the reader. The problem of reading a book is more than a problem of the eye; a good reading light permits the use of many positions of the human body and every suitable relation between book and eye. Reading a book involves both culturally and physically a strange kind of concentration; the duty of architecture is to eliminate all disturbing elements.

It is possible in a scientific way to ascertain what kinds and what quantities of light are ideally the most suitable for the human eye, but in constructing a room the solution must be made with the aid of all the different elements which architecture embraces. Here the skylight system is a combined product of the ceiling construction (a room almost sixty feet wide needs a ceiling construction with beams high enough for the erection of the deep cones) and special technical limits in horizontal glass construction. An architectural solution must always have a human motive based on analysis, but that motive has to be materialized in construction which probably is a result of extraneous circumstances. The examples mentioned here are very tiny problems. But they are very close to the human being and hence become more important than problems of much larger scope.

THE PROBLEM OF FOOD

(Continued from page 21)

from British and Dutch sources in the Malay Peninsula and the Dutch East Indies. According to Dr. L. V. Burton, editor of *Food Industries*, there was in mid-July only enough tin in the United States or en route to us for a normal seven months' use. If a hostile nation, such as Japan, should take over the sources of tin and impose an embargo upon this necessary metal, the problem would obviously become more complicated. We can get a less desirable grade of tin from Bolivia, but probably not enough for all our needs. Yankee ingenuity, however, generally overcomes such difficulties.

Mass feeding of millions of soldiers and of other large groups offers certain advantages. Not only is such a procedure more economical than family or individual alimentation but it permits of higher nutritional standards. Instinct may be of some value in the self-selection of foods, but taste is a fickle criterion of dietary quality. If mass feeding is properly supervised, it can be a great asset to an improved national nutrition.

Recognizing the need for more expert supervision of the nutrition of the soldier than had hitherto been the custom, the surgeon general of the Army wisely established a food division in the Sanitary Corps early in World War I. The officers of this division, mostly chemists or biochemists, were regarded dubiously by some medical officers and were opposed by the Quartermaster Corps, which had charge of the procurement and distribution of the Army's food. As a consequence, it was six months before the Secretary of War authorized a food division for the Army and permitted assignment of nutrition officers to camps. Even then, they were only advisers. This experience should not be repeated in another war.

At the time of the World War, of course, we were only at the beginning of the newer knowledge of nutrition. The first of the so-called accessory food factors known as vitamins was discovered in 1915, although investigations in previous years had pointed the way. By the time we entered the War, further progress had been made in vitamin research, but the results were not widely known and certainly were not applied to any extent. Today we know, or think we know, a great deal about the principles of human nutrition. We are familiar with the nature and functions of about a score of vitamins and have been able to produce many of them synthetically. We understand the functions of a dozen minerals in nutrition, recognize the characteristics of at least twenty amino acids of the proteins, and comprehend the interrelationships between the physiological and biochemical actions of these substances and other elements necessary in nutrition, such as fats, carbohydrates, water, enzymes, and hormones. With all this available knowledge, there is no excuse for any dietary deficiency diseases, such as scurvy, beriberi, pellagra, rickets, anemia, night blindness, xerophthalmia, keratitis, dental caries, or sprue.

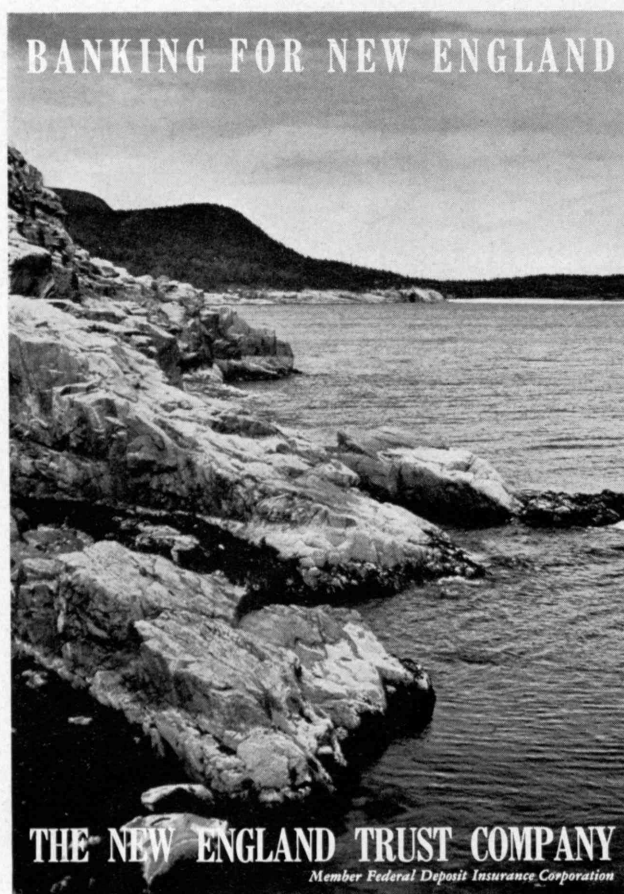
Despite the available knowledge, malnutrition is so prevalent in this country that it is a distinct detriment to the most effective military effort. The general population, which provides the man (Concluded on page 38)

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THE PROBLEM OF FOOD

(Concluded from page 36)

power for our military units as well as the materiel required for their successful operations and the morale that supports them in action, must partake of sustenance that promotes buoyant and not merely passable or indifferent health. This, then, is one of the most serious aspects of our food problem in wartime.

As pointed out in the June Review by Thomas Par-
 ran, Jr., surgeon general of the United States, recent surveys have indicated that more than 40 per cent of the people of this country are not now getting a diet adequate to maintain good health and vigor. Some low-income families consume too little food, but the chief defects in the diet are in nutritional quality, particularly in the lack of sufficient vitamins A, B₁, and C, and calcium. In a more recent article, in the *Journal of the American Medical Association* for September 7, Dr. W. H. Sebrell of the United States Public Health Service declares that nutritional diseases, both patent and latent, are widespread in this country and that their prevention and proper treatment constitute one of the greatest medical problems in this country today.

The solution of the problem of civilian malnutrition in the United States is partly an educational matter, partly economic, and partly industrial. Persuasive education in the principles of sound nutrition is helpful, particularly among the higher income groups, who often eat no more wisely than do those in the less privileged categories. Telling people on limited budgets to consume the more or less expensive protective and body-building foods, such as milk, butter, and meat, is a waste of perfectly good propaganda unless some means is devised to enable them to purchase the recommended foods. The food-stamp plan of the Federal Government is of some assistance, as is the action of states and municipalities in providing wholesome, inexpensive meals, such as proper school lunches, for the underprivileged.

The food industry can co-operate effectively in a campaign to improve the American diet by developing and applying methods to restore lost vitamins and minerals to common foods, or by economical fortification and enrichment of these foods in desirable nutrients. The addition of vitamin B₁ to breads and cereals, of vitamin D to milk, and of vitamin A to a few margarines are examples of methods already in use. It has been reported that the American public now spends, or squanders, at least \$100,000,000 a year on vitamin pills and capsules. While every vitamin required by the body can be obtained more economically, and probably more efficaciously, from the right selection of nourishing foods, the acquisition of these nutrients would be simplified if they were present in greater potency in many of our common, staple foods.

ROOMS FOR LISTENING

(Continued from page 23)

no longer new — and as scientists they are right. The arguments which go on are nearly as exciting as political ones and are much more amusing because no bitterness is involved. A new picture of room acoustics is evolving out of them.

(Continued on page 40)



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ROOMS FOR LISTENING

(Continued from page 38)

The new theory starts from the fact that sound is wave motion, a fact which was not utilized in the earlier theory. Sound is not a stream of rubber balls bouncing back and forth between the walls, losing a certain fraction of energy at each bounce. This is not the picture we use when we talk about the vibration of a violin string, for instance. It is possible to consider the wave on the string as bouncing back and forth from the bridge to the neck, but it is more sensible to consider the motion as a "standing wave," a vibration to and fro of the string as a whole. Such vibration is called a *standing wave*, since the *wave* does not seem to move back and forth from one end of the string to the other; rather, the *string* moves to and fro. Several different standing waves are possible for the string, the more usual ones being used when the violinist plays a harmonic note. In a very similar manner, the air in a room can vibrate as a whole, as a standing wave. There are many more "harmonics," or higher-pitch standing waves, for a room than for a string because the room has three dimensions, whereas the string has only length. Several of the standing waves are set into motion when a sound is produced in a room—they *are* the sound. When the source is turned off, they vibrate with diminishing amplitude until they die away. Each standing wave responds to its own natural frequency, just as each string in a piano resonates to sound of its own pitch or as a resonant electrical circuit in a radio set responds to the frequency for which it is tuned.

Each standing wave has its own reverberation time, i.e., the number of seconds required for its energy to die down to one-millionth of its original value. Most sounds require a large number of standing waves to carry them, and the reverberation of the sound is the average reverberation of the individual standing waves. A good auditorium must be so shaped that sound of any useful frequency will find several standing waves ready to respond, and all these waves must have reverberation times less than two seconds.

In most rooms the majority of the standing waves have reverberation times approximately equal to the value given by the Sabine formula, so that the broad average results of the new wave picture and of the earlier picture are the same. When we study the fine details and exceptions, however, the wave picture fits the facts, and the earlier one does not. For instance, there are a few standing waves—those for which the air moves parallel to some absorbing surface—which have reverberation times longer than the rest. Sound-decay curves drawn by modern high-speed sound-level recorders show the effects of these more sluggish waves, effects which cannot be explained by the earlier theory.

Along with this reorganization of theory comes a realization that the concept of absorption coefficient is necessarily an inexact one. A wall surface yields slightly to the fluctuations of pressure in the sound wave, allowing some air to penetrate its pores, where energy is lost through friction. The loss is not the same for every standing wave, so that the absorption coefficient cannot be a unique property of (Concluded on page 41)

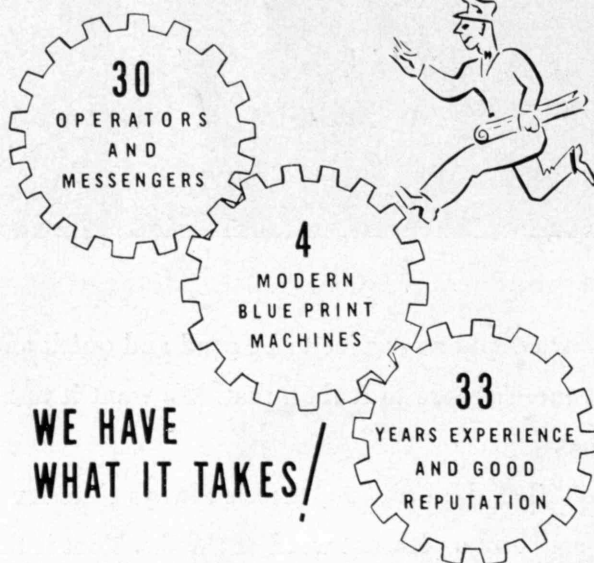
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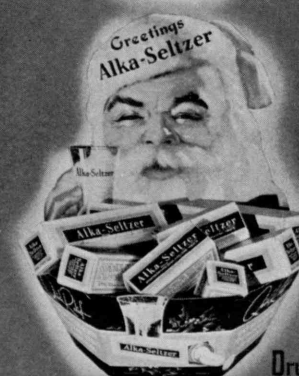
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ROOMS FOR LISTENING

(Concluded from page 40)

the wall material. It appears at present that the "acoustic impedance" of the wall — the ratio between sound pressure and average motion of air into the wall — is a more nearly fundamental property of the material. But many careful measurements must be made before we can be sure.

For the comfort of the old-timers, who see the complexity of the picture increasing at a terrific rate, it can be predicted that this tendency toward chaos will soon reverse itself. A new concept appears complicated just because it is new. Ten years ago atomic theory seemed impossible to visualize; today it appears obvious even to beginning students. In addition to the apparent simplification that will come from familiarity, there will also be a real simplification resulting from our increased knowledge of standing waves in a room. At present we must use the whole theoretical machinery of the wave theory because we are not sure yet which part of it is important in acoustics and which non-essential — and the most generalized form of the wave theory is a difficult and complicated subject. Soon we shall be able to decide what parts of the general theory are not needed in acoustics, and we can then fashion the remainder into a much more simple and more comprehensible picture.

Before we can strip off the nonessential parts of wave theory, however, it is necessary to work out in complete detail a few cases, in which the behavior of the standing waves must be computed by use of the full power of the wave theory. These results must be checked thoroughly by experimental data to find what is useful and what is not. Such research requires the complete resources of modern theoretical and experimental technique, and it is lucky for acoustics that these resources have already been developed for use in other branches of science. The power and efficiency of wave theory have been considerably increased in the past ten years during the expansion of atomic theory. The development of the vacuum tube makes possible the measurement of the microscopic motions of sound waves with considerable accuracy. These useful tools are ready to hand. Work is already in progress, at Technology and elsewhere, and the preliminary results seem quite promising.

THE LAYMAN'S SCIENCE

(Continued from page 25)

Then *basic* research, which must be quite fundamental, but has some distant practical objective — as is the case with soil science, or meteorology, or animal breeding. Those two categories make up what is usually called 'pure science.' . . . Then you have *ad hoc* research, with an immediate objective, like research on discharge tubes for lighting purposes, or on mosquitoes for getting rid of malaria. And finally, what industry calls *development*, or *pilot* research, which is the work needed to translate laboratory findings into full-scale commercial practice. . . ."

It is important, in the first place, that the writer measure his raw material by such a standard as this and, having determined its status, (Continued on page 42)

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THE LAYMAN'S SCIENCE

(Continued from page 41)

make that plain to the reader. To do so is the beginning of interpretation. To fail to do so is to nullify most of such attempts as he may make to elucidate social, economic, industrial, or political implications of that raw material — a handicap from the reader's point of view. Moreover, by failure to do so, the writer may bar himself from using these implications as assistance in the task of explaining the characteristics and the details of the event or accomplishment which he seeks to popularize. Very often the ancestry or the industrial application of a new device or process offers a much needed short cut to clear understanding of what it is and how it operates.

ANOTHER approach to the general problem of popularization is important. The popularizer is characterized by Professor Frohock as an "author-as-teacher" — and with this label few would quarrel. If a work of popularization has as its motive teaching rather than merely imparting factual information, it undertakes a threefold task. The work of the teacher (in a democracy, at least) is to give his students facts; then, by giving various interpretations of the facts and by giving examples and applications, to show his students the methodology of the subject; and finally to induce his students to form their own interpretations of the facts.

What interpretations may we expect the average layman to form? It is a reasonably safe assumption that the purely intellectual charm of science is not of sufficient appeal. It is also a reasonably safe assumption that the instinctive interpretations formed offhand by readers in the less stable portions of society are that the new work of science may displace somebody from a job or, conversely, may give somebody an easy chance to make a lot of money. Such instinctive conclusions, which teach the reader nothing, are a consequence partly of the socially beneficial industrial utilization of the results of research and partly of that egocentricity which is the less attractive aspect of American individualism.

It is not the business of the popularizer of science to sermonize against such interpretations. He is not a moral tractarian. Rather, it is his business competently and cogently to indicate other less conspicuous but infinitely more important inter- *(Continued on page 44)*

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THE LAYMAN'S SCIENCE

(Continued from page 42)

pretations which may be made. For instance, though speculation on the meaning of some political harangue may appear and reappear in the news columns until the sport section is reached, the public usually waits in vain for a coherent account of the sulfanilamides and their relation to medicine, to insurance, to the national income, to old-age security, to military necessity.

In general, the layman's relation to the usefulness of science is in part material, in part mystical, and it is on the basis of these two divisions that he will form his interpretations. The applications of technological advances impinge directly upon the material. The philosophical import of scientific discovery, whether that be in a further expansion of an expanding universe or in a further reduction of ultramicroscopic infinitesimality, works powerfully upon the mystical. Of greater final benefit to the layman than analysis of the one or speculation on the other is consideration of the patient, objective, co-operative methodology by which both are secured, for that method is of the essence of the equanimity, tolerance, and open-mindedness necessary to the democratic process.

Generally, the writer finds his greatest pleasure in recognizing and following through to its conclusion the process of analysis which the investigator employed in working out his results or which, spread out over as much as a century and a half, culminated in a contemporary accomplishment. The development, for example, of the electrostatic generator, from the early ideas of von Guericke through the experiments of Lord Kelvin with charged drops of water, through a device employing crude silk belts, and then through applied research to the reliable and efficient 1,500,000-volt x-ray machine now in daily use in the treatment of cancer, has all the elements of suspense, of complication, minor climax, climax, and denouement essential to a fiction best seller. It provides a direct method of making plain to an un-instructed layman just what the modern generator does, just how it operates. More than that, it offers clear illustration of scientific method in operation. A piece of popularization so constructed is far superior in social value to writing which seeks through what Professor Frederick G. Keyes calls "imagination shock" to jolt the reader by means of a concatenation of superlatives and strings of astronomical figures.

In undertaking popularization which sincerely seeks to be of utility in these ways, the writer must, of course, at times draw upon the "journalistic tricks" which Professor Leake mentions, and plentiful disagreement arises among writers over the comparative usefulness of some of these instruments. Some writers, for instance, denounce use of the analogy as dangerous because it forces the reader to understand not only the new unknown but the analogue to which it is likened. With equal strength others argue that if the analogue be selected with an eye to its familiarity as well as its aptness, the reader is assisted by being enabled to proceed from the known into the unknown. The analogy then dwindles for practical purposes to a simile. Apt similes illuminate and even ornament, but danger lies

in the analogy which is forced because the writer has not worked his ingenuity hard enough, and in the analogy which is merely slung in for the sensational effect to be had from striking juxtaposition of extremes.

Questions of completeness, too, often plague the popularizer if he is possessed of a precisionist conscience. Many of the important findings of science cannot be assimilated by the layman from the reading of one popular article. It does not follow, however, that such subjects should be neglected, any more than it should bother the schoolmaster that the subject of electricity cannot be assimilated by the student in a few lectures. Instead, the student has to be given a portion of it in high school, some more year by year through college, and, if he survives, still more during his graduate work. Obviously, the layman should not be given a wrong impression — an incomplete impression is not necessarily wrong — of a new scientific fact by the reading of a single article, but it is not so important that he assimilate that fact fully the first time as that he become interested in it. If his interest is aroused and if popularization heeds the desirability of continuity of treatment, he will be able to fill in the gaps.

This concession, however, is no excuse for the writer who disobeys the primary journalistic canon of accuracy. Inaccuracy resulting from scamped treatment of material, or from insufficient knowledge on the part of the writer, is an injustice to the reader and to the scientist whose work is reported. It is imperative that science popularization should be checked for accuracy, but it is not imperative that the popularizer defer to the scientist on matters of interpretation if the popularizer has some knowledge of the field and is skilled in the work which he undertakes.

As a teacher, the popularizer has as his main object seeing to it that the reader gets accurate instruction. Any teacher knows that a student learns best and most when he is interested; hence the popularizer almost by definition is a writer who must stir the reader's personal interest, must in one way or another relate his subject to the "I" of the reader. To do so is no more than good journalism or good teaching. In the popularization of science, however, it leads to important indirect results, because most scientific developments offer so many ways of making that relationship.

The whole question of social significance and long-term interpretation is raised when the writer seeks to indicate how a scientific development may affect the individual. It is quite useless to expect a science writer to give more than a tenuous suggestion of what the social significance of a development will be, for the plain reason that no one knows. He can, however, stress potentialities. But if he endeavors to point at the individual in discussing the potentialities of a discovery, he must approach speculation on broad social effects, since broad society is after all but accumulation of individuals.

Comprehension by the people of the social forces which operate on, by, and for them — comprehension which is impossible in a compartmentalized society — is a safeguard of democracy. The popularizer of science assists this comprehension, and his effort to render it easier need not be propaganda nor proselytizing, for he may pretty generally assume on the part of the people a rational desire to know. The danger is that these important pragmatic aspects of science may dominate the thinking and hence the writing of the popularizer to the obscuring of other aspects of the subject. It is, then, important that the writer on (*Concluded on page 46*)

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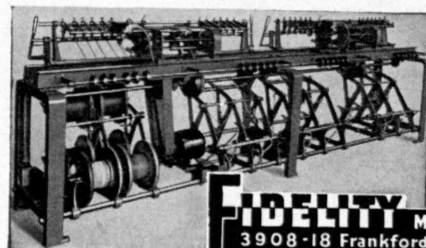
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THE LAYMAN'S SCIENCE

(Concluded from page 45)

science should realize that he is dealing with the stuff out of which the sinews of the future will be made. "It is a little truth which I carry," said Zarathustra. "But it is naughty, like a young child; and if I hold not its mouth, it screameth too loudly. . . ." And the reader for his part should also be guided, and should realize that the purport is not necessarily proportional to the noise.

THE INSTITUTE GAZETTE

(Concluded from page 33)

fundamentals of engineering but also an ability to recognize weaknesses in composition. His work will be to sample papers and reports written by juniors in the engineering course. Whenever he finds one in which the English is unacceptable, he will talk with the student's instructor, call the student into conference, tell him the paper is not acceptable, and ask him to rewrite it. The Committee urge speedy adoption of this plan.

At the present time, considerable difficulty is experienced with some foreign students who are not adequately prepared in English. The Committee were informed of a plan to teach beginners basic English. The Commonwealth of Massachusetts is using this plan to train foreigners who wish to become citizens, and the Federal Government is said to be using it to provide instruction for members of foreign legations. While some doubt exists in the minds of Dean Caldwell and Professor Bartlett as to the usefulness of the plan, they believe it worth a trial. The Committee, therefore, recommend that this program for teaching basic English be tried this term with a group of foreign students.

MAIL RETURNS

(Concluded from page 2)

as representing the highest ideals and aspirations of mankind as opposed to theological rules, doctrines, theories, and so on." (Italics mine.) Dr. Compton also speaks of the "dynamic character" of religion and "the need for a variety of religious denominations which emphasize different aspects of . . . the spiritual life." Regarding the changes in, and diversity of, religions, a distinction is necessary which may take its point of departure from an observation of Robert A. Millikan: "I believe," says Millikan, "that essential and not dogmatic religion is one of the world's supremest needs." In this quotation a complete but gratuitous opposition is set up between a religion and its dogmas; the implication is that dogma is not essential to religion. But it is merely implication and not proof. If a religion holds nothing certain, nothing true, what is it worth as a religion — is it worthy of the name? It is, of course, true that religion, culture, and knowledge itself may differ accidentally in different countries and in different periods of development, but it is obviously impossible for the same religion to teach essentially different doctrines at different times, as it is absurd to claim that two religions which are in such essential opposition can both be true.

When we use a co-ordinate system to solve a problem, the important physical quantities in the problem are independent of our choice of a reference system. They are what are called invariants. The essential doctrines so frequently referred to with contempt as "dogmas" are the invariants of true religion. They remain the same throughout all transformations in space and time. Without them the adequate solution of the problem of the universe will never be obtained.

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Honors and Upwards

☐ To CHARLES G. ABBOT '94, the Goodrich Award for distinguished public service, at New York World's Fair ceremonies.

☐ To WILLIAM D. COOLIDGE '96, membership in the newly organized National Inventors' Council.

☐ To ANDREY A. POTTER '03, the Lamme Medal for achievement in engineering education.

☐ To RAY P. DINSMORE '14, honorary doctor of engineering degree from Case School of Applied Science.

☐ To VANNEVAR BUSH '16, chairmanship of the National Defense Research Committee, and to FRANK B. JEWETT '03, RICHARD C. TOLMAN '03, and KARL T. COMPTON, President, membership on the committee.

☐ To ROBERT E. WILSON '16, honorary doctor of engineering degree from the Polytechnic Institute of Brooklyn.

☐ To EDWARD WARNER '17, vice-chairmanship of the Civil Aeronautics Board.

☐ To JOHN H. WALTHALL '24, the naming of his aluminum-extraction process for him.

☐ To RICHARD D. HOAK '28, senior fellowship in acid recovery from the American Iron and Steel Institute.

☐ To GEORGE B. WATERHOUSE, Staff, election to the Wall of Fame, New York World's Fair, for outstanding contribution in metallurgy by a foreign-born citizen.

☐ To NORBERT WIENER, Staff, election as chief research consultant on "Mechanical and Electrical Aids to Computation" to the war preparedness committee of the American Mathematical Society and the Mathematical Association of America.

All's Write

☐ With ROBERT H. RICHARDS '68 and CHARLES E. LOCKE '96, authors of a third edition of *Textbook of Ore Dressing*, McGraw-Hill; and with REINHARDT SCHUHMAN '38, who assisted them.

☐ With C. FRANK ALLEN '72, author of "An Engineer's Reminiscences of the Southwest," *Civil Engineering*, June.

☐ With CHARLES-E. A. WINSLOW '98, author of "Science Speeds up Air Conditioning," *Armchair Science*, July.

☐ With LAWRENCE ADDICKS '99, editor of *Silver in Industry*, Reinhold; and with ROBERT H. LEACH '00 and ALLISON BUTTS '13, who also wrote chapters.

☐ With WILL G. KELLEY '01, author of "Beating Black-Outs," *Allis-Chalmers Electrical Review*, June.

☐ With MYRON H. CLARK '03, author of "Training Engineers to Handle Men," *Journal of Engineering Education*, June.

☐ With RICHARD C. TOLMAN '03, author of *Statistical Mechanics*, Oxford University Press.

☐ With CARLE R. HAYWARD '04, author of *An Outline of Metallurgical Practice*, second edition, Van Nostrand.

☐ With EDWARD G. LEE '07, author of "Trends in Hydro Electric Development," *Journal of the Maine Association of Engineers*, April. And with JAMES HOLT '19, author of "Trends in Steam Power Generation," in the same journal.

☐ With GEORGE SCHOBINGER '08 and Alexander Lackey, authors of *Business Methods in the Building Field*, McGraw-Hill.

☐ With RUFUS E. ZIMMERMAN '11, author of "Standardization In the Steel Industry," *Industrial Standardization*, September.

☐ With NORMAN L. BOWEN '12, author of "Geologic Temperature Records," *Scientific Monthly*, July. And with MURRAY P. HORWOOD '16, author of "Biology and Human Affairs," in the same magazine.

☐ With HAROLD G. MANNING '12, author of *Inventive America*, Manning.

☐ With PAUL M. TYLER '12, author of *More Jobs for Minerals*, government bulletin I.C. 7118, May.

☐ With ARTHUR L. TOWNSEND '13, author of "Shop, Drawing, and Design Courses for Engineering Students," *Journal of Engineering Education*, June.

☐ With HOWARD P. CLAUSSEN '16, author of *Sidelights on Dog Training*, Claussen.

☐ With F. ALEXANDER MAGOUN '18, author of "Gee Up Thare," *Troubadour Yearbook*, New Hampshire Planning and Development Commission.

☐ With ROYAL BARRY WILLS '18, author of *Houses for Good Living*, Architectural Book Publishing; and of "Housing the Workers in War Industries," *Industry*, August.

☐ With MILES N. CLAIR '23, author of "Concrete Technology," *Journal of the Boston Society of Civil Engineers*, July.

☐ With ALBERT S. REDWAY '23, author of "Putting Job Rating to Work," *Executives Service Bulletin*, July.

☐ With EDWARD R. SCHWARZ '23 and Lelia J. Winn, authors of "Technical Evaluation of Textile Finishing Treatments, III. Use of Rank Correlation for Comparison of Data," *Textile Research*, September.

☐ With THEODORE ORDMAN '27, author of "Intermezzo for an Unfinished Symphony," *Volta Review*, June.

☐ With ROBERT S. HARRIS '28, author of "The Promise of Nutrition: Nourish and Flourish," *American Journal of Orthodontics and Oral Surgery*, May; and with L. MALCOLM MOSHER '29 and JOHN W. M. BUNKER, Staff, coauthor of "Studies in the Activation in Sterols," *Journal of the American Chemical Society*, July.

☐ With JOHN K. VENNARD '30, author of *Elementary Fluid Mechanics*, Wiley.

☐ With WILLIAM E. YELLAND '30, author of "Behavior of Gelatins and Glues in Size Baths at Low Concentrations," *Textile Research*, June.

☐ With DONALD G. FINK '33, author of "Inside the Television Set," *Science Digest*, September.

☐ With HAROLD R. BELLINSON '34, author of "Viscose Rayon: Stress-Strain Properties. II. Effect of Rate of Load," and "III. Effect of Relative Humidity," *Textile Research*, June and July.

☐ With PHILIP FRANKLIN, Staff, author of "The Four Color Problem" (end), *Scripta Mathematica*, December.

☐ With DUGALD C. JACKSON, Emeritus, author of "Man in an Engineering World," *Journal of the Franklin Institute*, July; and of "Trends in Engineering Education," *Science*, August 30.

Special Delivery

☐ By SAMUEL C. LIND '02, the presidential address; by PER K. FROLICH '23, discussion of "Butyl Rubber"; by MERRELL R. FENSKE '28, presiding officer's address at symposium of the division of petroleum chemistry; and by WALTER C. SCHUMB, Staff, presiding officer's address at symposium

of the division of physical and inorganic chemistry — all at the 100th meeting of the American Chemical Society, Detroit, September 9 through 13.

¶ By WALTER R. MACCORNACK '03, guest speech for the Architectural Alumni Society at the University of Pennsylvania bicentennial, September 17.

¶ By NATHANIEL McL. SAGE '13, principal speech at the Industrial Research Institute dinner, Beverly, September 27.

¶ By DEAN A. FALES '14, speech on modern automobile design before the Society of Automotive Engineers in White Sulphur Springs, W. Va., June.

¶ By LAWRENCE H. BAILEY '15, "Dies and Presses in Powder Metallurgy," and by CYRIL S. SMITH '26, "Notes on the Early Development of Powder Metallurgy," at the 1940 Conference on Powder Metallurgy at M.I.T., August 29 to 31.

¶ By WILLARD C. BROWN '16, "Economic Comparisons of General Lighting Systems," at the regional meeting of the Illuminating Engineering Society, Chicago, June 7.

¶ By ERIC F. HODGINS '22, contributions to a round-table clinic at the University of Rochester, May 8.

¶ By SAMUEL S. SASLAW '33, principal speech before the South Florida branch of the American Association for the Advancement of Science, Miami, in May.

¶ By ERNST A. HAUSER, Staff, ten lectures on "Modern Trends and Applications of Colloid Chemistry in Science and Industry" at the University of Denver summer sessions; twelve lectures on the "Chemistry and Technology of Rubber" to the technical staff of the Gates Rubber Company, Denver, in August; and the commencement address, "Science and Democracy," University of Wyoming summer term on August 29.

DEATHS

* Mentioned in class notes.

¶ CHARLES M. HUSSEY '80, August 22. His lifetime spanned the thriving era of the whaling industry in New Bedford, where for twelve years he was director of one of the most widely known whaling firms, J. and W. R. Wing. Mr. Hussey retired from the firm when it was liquidated twenty years ago. He was formerly a banker.

¶ EDWARD C. POTTER '80, August 3. A former manager and Vice-President of the southern works of the Illinois Steel Company, Mr. Potter was

credited with having revolutionized American blast furnace methods by a material reduction in the consumption of fuel for each ton of iron produced. For many years an active supporter of the National Symphony Orchestra, he was a composer of some note, having written an orchestral suite, the grand opera *Ishtar*, and a symphonic poem entitled *The Hairy Ape*. He was a member of the American Institute of Mining and Metallurgical Engineers, the British Iron and Steel Institute, Society of American Military Engineers; a fellow of the American Geographical Society, the Arts Club of Washington, and Past Master of Harmony Lodge, Number 17, Freemasons.

¶ HERBERT M. SABIN '80, May 8.

¶ CHARLES F. CODMAN '81, May 14, 1937.

¶ CARRIE RICE CLARK (Mrs. S. P.) '82, July 31.

¶ ALFRED DARROW '82, August 22.

¶ W. ALBERT SWASEY '82, May 21.

¶ GUSTAVE W. DRACH '83, July 18.*

¶ GEORGE G. SEARS '83, May 27.

¶ WINTHROP M. CHAPMAN '84, December 6, 1938.

¶ EDWARD V. SEDGWICK '84, September 11, 1939.

¶ CHARLES MILLER '84, August 10.

¶ FLORENCE PELTIER LEONARD '86, May 29.

¶ THERON A. NOBLE '86, October 25, 1938.

¶ ALBERT R. SWEETSER '86, September 12.

¶ CHARLES E. BOCKUS '87, June 28.*

¶ LOUIS A. FERGUSON '88, August 25.*

¶ HORACE B. SPERRY '88, August 19.

¶ LAURANCE J. CARMALT '90, June 24.

¶ EDWIN F. DWELLEY '90, September 17.

¶ FRANK H. BURTON '91, August 30.

¶ VERNON A. WRIGHT '91, October 29, 1938.

¶ FREDERIC B. ABBOTT '93, September 12.*

¶ CHARLES BELCHER '93, August 26.*

¶ NATHAN P. CUTLER, Jr., '93, September 10.*

¶ C. ROYCE BOSS '94, September 1 (see '93 notes).

¶ ARTHUR T. BOUTWELL '94, September 2.

¶ CHESTER W. DENNIS '94, October 9, 1939.

¶ CLEMENT HAMBLET '94, March 18.

¶ GUSTAVUS CLAPP '95, June 21.*

¶ EDWIN HOISINGTON '95, July 29.*

¶ MAURICE LeBOSQUET '95, August 8.*

¶ WALTER MARMON '95, August 29.*

¶ JOHN D. J. MOORE '95, October 1.

¶ WILLIAM H. PARKER '95, June 11.*

¶ WALTER POWERS '95, September 7.

¶ ARIEL SAVAGE '96, February 21.*

¶ ALBERT THOMPSON '96, May 18.*

¶ EDWIN P. BLISS '97, July 27.*

¶ CHARLES W. BRADLEE '97, September 3.*

¶ FREDERICK ST. J. HITCHCOCK '97, July 17.

¶ WALTER B. RUSSELL '97, July 13.*

¶ PHILO R. HOEFLER '99, August 11.

¶ AMASA A. HOLDEN '99, May 31.*

¶ S. FRANKLIN GARDNER '00, August 29.

¶ CARLTON R. ROSE '01, March 7.*

¶ FRANK B. WALKER '01, June 3.*

¶ HERBERT RAYMOND '02, July 23.*

¶ CHESTER H. WELLS '02, July 25.

¶ RALPH CARLISLE '03, June 6, 1939.

¶ MARY SNOW '03, April 4.*

¶ JOSEPH K. ELLIOT '04, March 17, 1939.

¶ ERNEST N. BRIGGS '05, July 4.*

¶ WALTER H. TRASK, JR., '06, September 1.

¶ LUCIUS F. HALLETT '07, June 3.*

¶ EUGENE C. HOWE '08, August 22.

¶ TYLER CARLISLE '10, August 14.*

¶ GEORGE H. ESTES '11, June 5.*

¶ LESTER G. METCALF '12, June 6.*

¶ FRANK BRAUER '13, May 27.*

¶ PAUL S. MOYER '13, July 16.*

¶ JOHN D. FROOM '14, September 19.

¶ NEWELL A. THOMPSON '14, June 5.*

¶ HARRIET PARK CRAMER (Mrs. H. P.) '15, July 29.

¶ WILLIAM McDONALD '16, June 15.*

¶ LOUIS GORFINKLE '17, November, 1939.

¶ LAWRENCE E. SCRANNAGE '15, June 16.

¶ IRVING YOUNG, JR., '17, May 15.*

¶ HENRY W. WRIGHT '18, April.

¶ CHARLES A. CASSELL '21, July 6.

¶ HERMAN L. SCHMIDT '21, July 27.*

¶ JOHN W. BARROWS '23, December, 1939.*

¶ WILLIAM COLEMAN '24, June 15.*

¶ ELLA GERRY '24, March 6, 1938.

¶ FRANCES GRISWOLD MARTINDALE (Mrs. L.) '24, February 14.

¶ HARVEY W. COX '25, May 30.

¶ CHARLES A. ROSS '25, September 30.

¶ NICHOLAS N. SINITZIN '26, May 15.

¶ RAYMOND BEVERIDGE '28, June 18.

¶ GEORGE D. WOOD '30, April 27, 1939.

¶ JOHN P. HARTMAN '33, June 7.*

¶ RICHARD CAVANAGH '34, June 8.*

¶ WILLIAM M. BENSON '36, June 1.*

¶ WILLIAM J. LINDSTROM '36, May 23.*

¶ PIERS R. EDGCUMBE '38, May 27.

¶ MARJORIE DAVIS HASLAM (Mrs. E. T.) '39, March 5.

¶ LEVI S. MALONEY '39, July 30.

¶ JAMES F. NORRIS, Staff, August 3 (see Institute Gazette).

¶ GEORGE RUTLEDGE, Staff, September 21 (see Institute Gazette).

¶ RAYMOND UNWIN, Former Staff, June 28.

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

A.C.S. Convention

From Lawrence H. Flett '18 we learn that the M.I.T. Alumni attending the American Chemical Society Convention at Detroit met at lunch on Tuesday, September 10. About one hundred were present. Gerald A. Fitzgerald '23 presided and Avery A. Ashdown '24 was the principal speaker. Walter G. Whitman '17 gave a very brief talk. The local alumni chemists arranged for entertainment. Present plans call for a luncheon at St. Louis next spring. Atlantic City next fall.

Several Technology men took active part in the convention. Outstanding among them were Samuel C. Lind '02, who delivered the annual presidential address; Per K. Frolich '23, who discussed "Butyl Rubber;" Merrell R. Fenske '28, who presided at the division of petroleum chemistry; and Walter C. Schumb, Staff, who presided at the division of physical and inorganic chemistry.

American Mining Congress

At the September meeting of the congress in Colorado Springs, a number of Technology men were in attendance. Under the leadership of Charlie Willis '06 and Sam Coupal '07 a luncheon meeting took place at the Broadmoor Hotel on September 18. The roster of those present follows: Charles E. Locke '96, Alumni Secretary and Professor of Mining Engineering and Ore Dressing at Technology; Harold O. Bosworth '02, President of the Denver Fire Clay Company, Denver, Colo.; Russell P. Raynolds '06 of the American Smelting and Refining Company, Denver; Charles F. Willis '06, editor of the *Mining Journal*, Phoenix, Ariz.; Joseph S. Coupal '07, director of the State Department of Mineral Resources, Phoenix; John C. Kinnear '07, general manager of the Nevada Consolidated Copper Corporation, McGill, Nev.; Carl J. Trauerman '07, President of the Ruby Gulch Mining Company and officer of various organizations in Butte, Mont.; Thomas G. Chapman '09, dean of engineering at the University of Arizona, Tucson; Charles F. Thompson '14, Mine and Smelter Supply Company, Denver; George W. Repetti '16, Vice-President of Holly Sugar Corporation, Colorado Springs; Arthur L. Hill '23, Vice-President of the National Fuse and Powder Company, Denver; John F. Shaw '28, mine operator in Cripple Creek, Colo.; and George Repetti, Jr., who entered M.I.T. as a freshman this fall. Also present were two guests: Francis A. Thomson, President of the Montana School of Mines, and George O. Argall, prominent mining engineer of Denver.

S.P.E.E.

The M.I.T. alumni luncheon held at Berkeley, Calif., during the Society for the Promotion of Engineering Education meeting was attended by twenty Alumni and friends on Tuesday, June 25. Although the gathering was small, the occasion was a very enthusiastic and happy one. Arthur L. Townsend '13 of M.I.T. presided and introduced the various speakers. Edward L. Moreland '07, the official delegate from the Institute to the convention, spoke for Dr. Compton and the Institute. Andrey A. Potter '03 of Purdue, the recipient of this year's Lamme Medal, spoke for the Alumni. B. M. Woods, guest at the luncheon from the University of California and a close friend of Dr. Compton, spoke on behalf of the few guests who attended. Allan R. Cullimore '07, President of the Newark College of Engineering, closed the meeting with appropriate remarks.

Others in attendance were Charles G. Hyde '96, University of California; Henry W. Blackburn '08, Syracuse University; Richard G. Tyler '10, University of Washington; Roy A. Seaton '11, Kansas State College of Agriculture and Applied Science; Earle O. Turner '14, University of New Brunswick; Herbert J. Gilkey '16, Iowa State College of Agriculture and Mechanical Arts; Edmund D. Ayres '22, University of Wisconsin; Morrough P. O'Brien '25, University of California; C. Ronald Smith '38, University of Pennsylvania; and Benjamin H. Spurlock, Jr., '39, University of California.

This luncheon has become an annual affair at the meetings of the S.P.E.E. The idea was started at Atlanta some years ago. The next annual meeting of the society will be at the University of Michigan. Since Ann Arbor is in the center of a considerable Technology alumni population, it is hoped that a large luncheon event may be arranged.

Technology Club of Albany

The Club held its first dinner meeting of the autumn on September 11 at the Wellington Hotel, with Paul Hillard '22 presiding. The attendance, considering that the Club had never before held a meeting so early in the season, was surprisingly good. The guest speaker was Robert G. Caldwell, Dean of Humanities at M.I.T. In an informal but highly interesting manner Dean Caldwell led us from the early days of Rogers and his farsighted conception of the need for a cultural background as a basis for technical training, to the present when, with the gradually widening point of view, a dean became necessary to direct the various subjects now grouped under the title of humanities. It was apparent to all present

that our Alma Mater's capable President had again demonstrated his ability in selecting an outstanding personality in a particular field. Dean Caldwell has had a free rein in developing the humanities along lines best suited to give Technology men a broad outlook on life; an ability to express themselves clearly, nontechnically as well as technically; and, finally, a sane, well-balanced, civic conception of their duty to mankind. — CARL H. ANDERSON '27, *Secretary*, New York Telephone Company, 158 State Street, Albany, N.Y. BURT R. RICKARDS '99, *Publicity Chairman*, 381 State Street, Albany, N.Y.

Atlanta Alumni Association of the M.I.T.

Alumni of Georgia held their annual reunion and dinner dance at the Piedmont Driving Club on April 5. The local members turned out in goodly numbers and enjoyed an evening of music, local talent, and an excellent moving picture. — The retiring President, Percy H. Thomas '93, introduced the newly elected President, Clarence B. Rogers '14. Sidney B. Jewett '28 was elected vice-president, and Lawrie H. Turner '99 was re-elected secretary.

The following members and guests attended: Mr. and Mrs. Percy H. Thomas '93, Charles A. Smith '99, Miss Mabel Loeb, Lawrie H. Turner '99, Mr. and Mrs. William J. Sayward '01, Mr. and Mrs. Arthur K. Adams '13, Mr. and Mrs. Hibbard S. Busby '14, Mr. and Mrs. Clarence B. Rogers '14, Harold C. McLaughlin '18, Miss Isabelle Boyquin, Mr. and Mrs. William E. Huger '22, Mr. and Mrs. T. Edward Moodie '24, Roger W. Allen '27, Mr. and Mrs. Sidney B. Jewett '28, Mr. and Mrs. Calvin H. Mohr '33, Bretton Perry '33, Mr. and Mrs. William W. Pleasants '33, E. Bennett Beede '35, Arthur L. Merrifield '35, Mrs. Violet T. Illges, and Philip E. Sellers '38.

During the latter part of April an old-time barbecue was held at a rural roadhouse at Lakemore. The affair was well attended, and dancing was in order during the evening. — On the evening of September 14, our genial and most active member, Charles A. Smith, gave a wonderful ham and baked-bean dinner on his estate at East Lake.

During the past year the following members have moved away because of change of business: Irving B. McDaniel '17, lieutenant commander, United States Navy, moved to Washington, D.C.; Richard W. Smith '21, to Tuscaloosa, Ala.; and Samuel H. Reynolds '22, to New York City. Kenneth K. Ayers '26 has gone to Birmingham, Ala.; Dale Stetson '27, to New York City; and Bretton Perry '33, to Trenton, N.J. — New members in the Atlanta district are Charles Hibbard '09, lieutenant com-

mander, United States Navy; Frank B. Dyer '26, Roger H. Wingate '37; and John A. Eaton '40. — LAWRIE H. TURNER '99, *Secretary*, 625 Sherwood Road, Northeast, Atlanta, Ga.

Detroit Technology Association

The 1939-1940 activities of the Association included nine gatherings which afforded opportunities for renewal of old acquaintances and the making of new friends, and provided programs of interest in various fields. — The first meeting was held on September 26, 1939, at Northwood Inn, where the program consisted of consuming an excellent meal and viewing the floor show provided at the inn. This meeting was devoted strictly to amusement, and we have vague recollections of being invited by the master of ceremonies to close the show by singing the "Stein Song" for the entertainment of other guests. We got quite a hand for our efforts, since some of the audience seemed actually to have heard of M.I.T. previously. Twenty-two members were present in our party, at least ten of whom assisted in the musical rendition.

On October 12 (not a holiday in Michigan) we met for dinner at the Wardell Hotel and then went as guests of the Detroit Engineering Society to hear a talk by Preston W. Slosson, professor at the University of Michigan, on the subject, "Europe Takes the Plunge." Professor Slosson had just returned from a year in Europe with the Carnegie Endowment for International Peace, and his talk covered many factors contributing to the start of open hostilities in Europe. Twenty-nine members were present. — Our next meeting fell at the start of the hunting season on November 14 and we were amazed at what Nimrods these M.I.T. men turn out to be. Only eleven members showed up to consume the meal provided at the University Club and to listen to a most delightful informal talk by Herbert E. Russell, Secretary of the Detroit City Planning Commission. Mr. Russell sold us on the need for a city plan for Detroit, and it's too bad that a greater number could not have been present to absorb the propaganda.

On December 12 a group of twenty-five members met at the Bell Telephone Building and after a hearty dinner were shown through the operating and equipment rooms and were given detailed explanations regarding the operations of the telephone system. — Twenty-five men attended a dinner at the Intercollegiate Alumni Club on January 23 and heard H. A. Cranefield, regional attorney for the National Labor Relations Board discuss the National Labor Relations Act. This timely subject evoked much discussion from the assembled group. — The Intercollegiate Alumni Club was again the meeting place on February 27, when Watts Shelley of the foreign trade division of the Detroit Board of Trade told us why we needed a renewal and extension of reciprocal trade pacts. Twenty-two men were present.

Our banner gathering of the season was the meeting of March 19 at which Karl T. Compton was the guest of honor and principal speaker. There was such a crowd that the facilities of the University Club were taxed to the limit and although not all present signed the register, the official count showed ninety-six. All principals and headmasters of preparatory schools in the Detroit area were invited as guests of the association through the kindness of B. Edwin Hutchinson '09, who made it financially possible for such largesse; about fifteen of them attended. All were delighted with President Compton's narrative of current activities at M.I.T. and were impressed by the evidence of its leadership in varied fields as shown by excellent stereopticon slides. — On April 11 a group of twenty-five Alumni gathered for luncheon at Joey's Stables and then were conducted on an inspection tour of the city's new sewage-disposal plant at 9110 West Jefferson Avenue. This trip was most enlightening and was thoroughly appreciated by all who attended. The operations were explained and the tour was sponsored by Arthur B. Morrill '09, who has had charge of the engineering and operation.

Our final meeting, held at the Intercollegiate Alumni Club on June 4, was addressed by Cyril H. Cane, British consul at Detroit, on the subject, "Great Britain Today." His friendly and humorous talk was much enjoyed, and discussion waxed loud as to what was going to happen next and what could be done to stop it. — In reviewing the year's activities, it is appropriate that the association express a word of appreciation to John M. Campbell '25, for his able performance in arranging the bulk of the programs. — During the past season, if you had attended a meeting, you might have encountered: Minot S. Dennett '11, Robert C. Doremus '14, Philip C. Baker '16, Treddick K. Hine '16, John T. Cronin '17, Charles T. Ellis '17, Allyne C. Litchfield '17, Everett F. Doren '19, Witold W. Kosicki '20, Willis Bugbee '21, Edward A. Ash '22, Charles S. Comey '22, Perry C. Maynard '24, John M. Campbell '25, Franklin Fricker '25, Douglas B. Martin '25, Maurice L. Ash, Jr. '26, Fred J. Dysktra '26, John E. Longyear '26, David M. Sutter '26, Francis H. Rutherford '28, Leo J. Tyburski '32, Chesley Ayers '34, and Wilbur C. Oliver '36.

The meetings of the Detroit Association are normally held once a month from September to May, inclusive, and are customarily scheduled on Tuesday evenings. Visiting Alumni who may wish to ascertain the date and place of any Detroit meeting are invited to get in touch with the Secretary (Detroit-Cherry 9900) or the President, John E. Longyear (Detroit-Randolph 2100). — PERRY C. MAYNARD '24, *Secretary*, 17701 Manderson Road, Detroit, Mich.

Technology Club of New Hampshire

The members of the Manchester Club and their wives were the guests of Presi-

dent and Mrs. Arthur J. Conner '88 at an informal dinner at the Ashworth Hotel, Hampton Beach, on June 30. A last minute call on Charlie Locke '96 for speakers resulted in his bringing with him Robert G. Caldwell, Dean of Humanities at Technology, and Henry E. Worcester '97, President of the Alumni Association.

Following the dinner Mr. Conner appointed Malcolm C. Mackenzie '14 toastmaster, or "keynoter," as Mac chose to call himself. Mac did an excellent job of introducing the speakers, the first of whom was Professor Locke, who is Alumni Secretary. He spoke briefly of his last-minute efforts to obtain speakers and of what Technology is doing to render service to government and industry.

Dean Caldwell followed and gave an interesting account of his first year at Technology. He also brought out how Tech is developing well-balanced men who can adapt themselves to the social, political, and economic conditions of the business world. Mr. Worcester spoke of the changes at M.I.T. since his undergraduate days, discussing briefly the new gymnasium, dormitories, and recreational activities. Following the speaking, some left immediately for home and others enjoyed themselves on the beach.

Those present included Mr. and Mrs. Samuel P. Hunt '95, Mr. and Mrs. Henry D. Jackson '95, Mr. and Mrs. Walter O. Pennell '96, Charles B. Paine '97, Mr. and Mrs. Arthur O. Roberts '04, Harry H. West '05 and his daughter, Mr. and Mrs. Walter D. Davol '06, Mrs. Malcolm C. Mackenzie, Mr. and Mrs. Herbert D. Swift '15, Mr. and Mrs. George W. Waymouth '16, Mr. and Mrs. Richard S. Holmgren '19, Mr. and Mrs. Clarence L. Nutting '19, Mr. and Mrs. Robert W. Haskel '21, Mr. and Mrs. Victor S. Phaneuf '21, Mr. and Mrs. Albert E. Page '22, Mr. and Mrs. Blaylock Atherton '24, Mr. and Mrs. Arthur J. Nakos '25, Mr. and Mrs. Charles Rich '26, Mr. and Mrs. Horace A. Emerson '27, Mr. and Mrs. Kenneth Hobart '32, Mr. and Mrs. Edward R. Atkinson '33, Amory J. Meloon, Mrs. Holmes, and Mrs. Robert G. Caldwell. — HORACE A. EMERSON '27, *Secretary*, 196 South Street, Concord, N.H.

Technology Club of Milwaukee

The Club held its final meeting of last season on June 17 at the City Club. The special attraction was F. Alexander Magoun '18 of M.I.T. We were fortunate in being able to secure Professor Magoun coincidentally with his trip to speak at the national convention of the American Society of Mechanical Engineers at Milwaukee. Another welcome guest was Douglas P. Adams, also of the Technology staff and here for the same convention. Professor Magoun entertained and instructed us with one of the most interesting talks which it has been our privilege to hear. — New officers elected for the 1940-1941 season were: President, Bruno H. Werra '32; Vice-President, Daniel J. O'Connor, Jr., '37; Secretary-Treasurer, Warren A. Bjorn '34.

Despite the somewhat unfavorably late date on which this dinner was held, the attendance was the best we had had during the year: Harry H. Valiquet '03, John F. H. Douglas '05, Louis O. French '10, Kenneth B. Howell '12, Julius W. Werra '22, George Y. Anderson, Jr., '24, Edgar B. Godley '26, Maurice D. James '27, Ralph E. Boeck '28, Erling S. Mathiesen '29, Bruno H. Werra '32, Franklin K. Koerner '33, Warren A. Bjorn '34, Robert N. Eck '34, John B. Ballard '35, Milton K. McLeod '35, Edward Woll '35, Robert M. Osborn '36, Daniel J. O'Connor, Jr., '37, A. Preston Heintz '38, Johann H. and Mrs. Meier '38. — ROBERT M. OSBORN '36, *Retiring Secretary*, Box 37, West Allis, Wis. WARREN A. BJORN '34, *Secretary*, care of E. H. Shaefer Corporation, 940 West St., Paul Avenue, Milwaukee, Wis.

M.I.T. Club of Northern New Jersey

Terminating the summer interlude allowed the new 1940-1941 officers of the Club, who last met June 17, a summons on September 4 brought together the program committee, charged with entertaining the boys during the coming hibernating season. — Fifteen of the twenty-four invited members were present at a dinner meeting at the Newark Athletic Club on Thursday, September 12, and substantial progress was made in organizing a plan for the fall smoker, which is tentatively scheduled to take place on Thursday, November 14, unless Thanksgiving Day by executive dictum is officially proclaimed for that day.

Our Club President, Miles Pennybacker '23, has a formidable list of renowned speakers for the evening, all clamoring to be heard, but none has as yet been definitely selected. The prospectus for the smoker will list a guest prominent in aviation circles, as well as some interesting movies accompanied by a commentator. — Harold N. Cummings '10, Professor at the Newark College of Engineering, will be host at the Thursday luncheons at the Newark Athletic Club, which will take place every Thursday from October through April, instead of on the second Thursday of the month as heretofore. This plan will relieve everyone of any uncertainty as to conflict of dates, and it is expected attendance will profit by such an arrangement.

During February the Club will hold its annual stein party, and probably in April will close its activities with the usual incomparable banquet. Interspersed in the year's activities will be other gatherings of Tech men alone and with their good wives, but whether these assemblies will be in the form of a picnic, dinner dance, mystery trip, or otherwise still is a major problem with the organization. — AUGUST P. MUNNING '22, *Secretary*, Munning and Munning, Inc., 202 Emmett Street, Newark, N.J. FREEMAN B. HUDSON, JR., '34, *Assistant Secretary*, Colgate-Palmolive-Peet Company, 105 Hudson Street, Jersey City, N.J. NEWTON S. FOSTER '28, *Assistant Secretary*, 73 Daniel Avenue, Rutherford, N.J.

Technology Club of New York

The second annual golf tournament of the Club was held at the Knollwood Country Club on June 27. Thirty-four members and their guests attended, including James C. Duff '86, Asher L. Weil '01, John C. Fruit '02, Norman C. Nicol '08, William D. Neuberg '18, Frank L. Bradley '20, Malcolm S. Burroughs '20, Alfred T. Glassett '20, Daniel J. Hennessy '20, Stanley C. Reynolds '20, Laurence W. Coddling '22, C. George Dandrow '22, Marion S. Dimmock '22, William D. Pinkham '22, William H. Mueser '22, E. Allan Reinhardt '22, William H. Correale '24, Anatole R. Gruehr '24, William L. Keplinger, Jr., '24, Gardner B. MacPherson '24, Edward Wininger '24, Emerson W. Eddy '26, and James G. Walker '26.

Jim Walker repeated his performance of last year and again won first prize, this time a silver cigarette case. Joe Hennessy, who used to build miniature golf courses, romped off with second honors. Every entrant received a prize of one sort or another. — The day of the tournament coincided with the last day of the Republican National Convention in Philadelphia, and everyone gathered at the clubhouse after the play to listen to the returns as they came over the radio. There were loud cheers when State Senator Thomas C. Desmond '09, former President of the New York Club, switched to Willkie halfway through the evening. — All agreed that the golf tournament was even more enjoyable and successful than last year's, which was considered a record event. The affair has become an important function in the club's calendar, and the possibility of a late fall tournament is under discussion.

Many Alumni visited the Club during the summer. The dining rooms and bar have become popular meeting places for Technology men in the metropolitan district, and the special Technology luncheon round table enjoys a large following. The Club's fall season promises to be very active, with many course and class functions planned for October and November. The employment committee under Jack Fruit has received many requests for men to fill all types of positions. — New members who have joined the Club recently include Franklin W. Hobbs '89, Meade Bolton '16, Alfred K. Althouse '17, Malcolm S. Burroughs '20, E. Allan Reinhardt '22, Nathan Schooler '24, Samuel H. Caldwell '25, George S. Maynard, Jr., '33, and Charles R. Hook, Corporation. — JOHN J. MURPHY '23, *Secretary*, 24 East 39th Street, New York, N.Y. CONSTANTINE S. DADAKIS, *Publicity Committee*, 644 Riverside Drive, New York, N.Y.

M.I.T. Club of Western Pennsylvania

At the June meeting, held at the University Club in Pittsburgh, Francis J. Chesterman '05, Vice-President and general manager of the Bell Telephone Company of Pennsylvania, showed colored

films which he had taken of the raising of the ill-fated submarine, *Squalus*. The colored pictures were supplemented by films showing the submarine on previous test dives, and by films of the actual rescue operations. Mr. Chesterman's numerous shots of the operations have a quality generally exhibited only by professional cameramen. The films cover the entire raising procedure from the first unsuccessful attempt, on through the successful raising made in three separate lifts of approximately eighty feet each, to the entry of the salvaged vessel into the Portsmouth Navy Yard. — Parts of the interior of the *Squalus* were redesigned, and after the expenditure of one and three-quarter million dollars the submarine, renamed the *Sailfish*, set forth just one week less than a year after the ill-fated test run.

Charles M. Boardman '25 presided at the business meeting at which the usual informative committee reports were given. The business of the evening was the election of officers for the 1940-1941 season. Those elected include Elbridge J. Casselman '15, President; Millard M. Greer '26, Vice-President; Martin L. Tressel '24, Treasurer; F. Reed Dallye '22, Secretary; E. Neal Wells '29, Assistant Secretary for Membership; Paul R. Des Jardins '38, Assistant Corresponding Secretary; Eugene L. Chappell '24, Herbert H. Hall '14, and Joshua C. Whetzel '17, Executive Committee. — F. REED DALLYE '22, *Secretary*, Aluminum Company of America, 801 Gulf Building, Pittsburgh, Pa. PAUL R. DESJARDINS '38, *Assistant Secretary*, 1945 Koppers Building, Pittsburgh, Pa.

Intermountain Technology Club

The combined circumstances of a Salt Lake City visit from Charles E. Locke '96, Alumni Secretary, and the Salt Lake City regional meeting of the American Institute of Mining Engineers, attracting Technology Alumni from all sections of the United States, resulted in a joint luncheon at the Hotel Utah attended by members of the Club and Alumni present at the mining meeting.

After a tribute to the late Walter H. Trask '06, for many years Secretary and guiding light of the Club, Professor Locke gave a synopsis of alumni activity and recent developments at Cambridge, particularly in relation to the present preparedness program. Special interest was shown in Professor Locke's remarks on admissions and the newly created Alumni Fund. — Local club business included the elections of Bayard W. Mendenhall '02 as chairman, and Frank R. Milliken, Jr., '34, as secretary, for the present term. Off-the-record resolutions regarding increased club activity in the future were also noted.

Club members present were Lewis T. Cannon '96, Bayard W. Mendenhall '02, Richard W. Senger '05, John C. Kinnear '07, William Jennings '15, Francis T. Whitworth '21, Clarence I. Justheim '22, Frank R. Milliken, Jr., '34, David J.

Buckwalter '35, Walter F. Johnson '39, and Robert D. Macdonald '40. Guest Alumni included, in addition to Professor Locke, Edward E. Bugbee '00, on his way to Palo Alto; Hallet R. Robbins '05 of Palm Springs, Calif.; Joseph Daniels '05 of Seattle; Walter F. Pond '17 of Nashville; W. Spencer Hutchinson, Jr., '29 of Winnemucca, Nev.; Louis C. Raymond '32 of Matheson, Calif.; and Albert W. Schlechten '40 of Minneapolis. — The Club, to augment a small local membership and to create an increased interest in Tech activities throughout this sparsely populated but easily traversed region, desires to include in its functions Alumni from western Wyoming, southern Idaho, and eastern Nevada. It is hoped that future meetings will have the cosmopolitan character indicated. — FRANK R. MILLIKEN, JR., '34, *Secretary*, 8642 West 2800 South, Magna, Utah.

Technology Club of Schenectady

The first meeting of the Club this fall was held on September 11, when Robert G. Caldwell, Dean of Humanities, joined us at luncheon. Making Schenectady his first call in a series of meetings with Alumni Clubs in this part of the country, Dean Caldwell told us much about the history of humanities at Technology and the present plans to integrate further the engineering and social aspects of student life. He also had colored movies of dinghy racing on the Charles and scenes from Freshman Camp. As the meeting was at noon, the attendance was limited, but those who came were well repaid. — THERON C. JOHNSON '33, *Secretary*, Engineering General Building 23, General Electric Company, 1 River Road, Schenectady, N.Y.

M.I.T. Club of Central New York

The fall meeting was held at the University Club in Syracuse at 6:30 p.m. on the evening of September 12. This meeting was held somewhat earlier in the season than usual, in order that we might have the pleasure of a visit from Robert G. Caldwell, Dean of Humanities at the Institute, who was passing through Syracuse at the time.

Following the usual fine dinner served by the University Club, we were delightfully entertained by Dean Caldwell, as he told us the story of past, as well as present, plans of the Institute to sweeten and otherwise brighten a purely cold and heartless technical curriculum with studies that would contribute to the development of a well-rounded individual when graduated. Many of the older Alumni present were reminded of amusing incidents connected with these efforts when they were at the Institute, and all of us were very much interested to hear of the present plans as Dean Caldwell so well presented them. We also enjoyed the colored movies of activities at Tech, featuring the Freshman Camp and the sailing opportunities on the Charles.

This meeting served as a substitute for our annual meeting, providing for a review of the year's work and the election of the officers for the ensuing year. Thus, following a reading of the report of the Secretary-Treasurer, Henry W. Blackburn '08, President Edwin A. Gruppe '22 called for the report of the nominating committee. This committee reported their selection of William H. Eager '04 for president and Joseph F. Owens, Jr., '40 for secretary-treasurer.

President Gruppe's efforts to interest the local Institute undergraduate and prospective students were well rewarded when the following men presented themselves: John W. Barker '41, Daniel J. Degen '41, Richard S. Haven '42, Howard S. Gleason '43, Stewart M. Hill '43, Ronald H. Smith '43, and, as a graduate student at the Institute for the coming year, Robert C. Williamson of the class of '40 at Syracuse University.

The following Alumni were duly registered: William H. Eager '04, Henry W. Blackburn '08, Frederick W. Barker '12, Harold P. Gray '16, Edwin A. Gruppe '22, Fred S. Hungerford '24, Theodore E. Simonton '24, Edward D. McLaughlin '25, Donald W. Diefendorf '30, Leonard L. Ellis '30, Robert K. Kepner '34, Henry S. Young, Jr., '35, Richard S. Robinson '36, and Joseph F. Owens, Jr., '40. The meeting adjourned at about 10:30 p.m. with a feeling of satisfaction that something well worth while had been accomplished. — HENRY W. BLACKBURN '08, *Retiring Secretary*, 615 Fellows Avenue, Syracuse, N.Y. JOSEPH F. OWENS, JR., '40, *Secretary*, 1810 Erie Boulevard, East, Syracuse, N.Y.

M.I.T. Club of Toledo

A dinner meeting was held on June 21 at the Women's Club of Toledo. As it was late in the season, we did not have an outstanding turnout, but those who did appear enjoyed a thoroughly interesting evening. Paul Hansen '02 was the speaker. He is directing the construction of a new water-supply system for Toledo, which will enable our city to obtain water from the lake instead of the Maumee River as it now does. In conjunction with his talk, Mr. Hansen showed us slides of the proposed intake pipe lines, pumping stations, reservoirs, and treating plant. The meeting was entirely informal and the questions many and various, resulting in a far better understanding of our municipal water problem by many of us.

Among those present were Arch Gardner '02, Isaac Hausman '11, Stanley H. Davis '13, Raymond C. Reese '20, Herbert A. Barnby '23, Waynard R. Vosper '26, and Charlton P. Whittier '27. — CHARLTON P. WHITTIER '27, *Secretary*, Owens-Illinois Glass Company, Toledo, Ohio.

Washington Society of the M.I.T.

The Society held its first meeting of the season on September 20 at the Y.W.C.A., 17th and K Streets, Northwest, at five o'clock, with an unusually large opening

attendance of fifty-three. Merton Emerson '04, our new President, remarked briefly on the similarity of the present situation to that twenty years ago when so many Technology men were co-operating in defense work in Washington. He promised Dr. Compton's attendance at the next meeting to discuss this subject. — Proctor Dougherty '97 introduced a newcomer, W. Myron Davy '20, a large-scale builder in Washington and President of the Congressional Country Club. He also asked Leon L. McGrady '17, a visitor from Rochester, N.Y., to take a bow.

Our guest speaker, the Rev. Edmund A. Walsh, S.J., Vice-President of Georgetown University and Regent of the School of Foreign Service, an outstanding authority and lecturer, discussed "Present Problems of American Diplomacy." Father Walsh began by expressing an affection for the Institute dating from his school days when he stood in line at Rogers for M.I.T. lectures. He also reminded us that he had an office at the Institute during the World War. Father Walsh voiced current doubts as to the value of negotiation in view of the fact that diplomacy has failed so miserably in maintaining world peace. We must keep our eyes fixed on the ultimate return of rationality in the world or we shall return to the Icecap Age. His talk dwelt around the question of whether this country has a foreign policy or whether it has simply improvised for emergencies. He outlined the principles of American diplomacy and foreign policy as consisting of abstention from European affairs, interest to the extent of intervention at times in Latin America, and co-operation in the Far East. Dating from Jefferson's time, abstention took the form of no entangling alliances and neutrality. Latin American interest resulted in the Monroe Doctrine. Eastern co-operation consisted of maintenance of the open door in China.

Other views to which we have until recently adhered are pacific settlement of international disputes, freedom of the seas, and the most-favored-nation clauses. Until 1935 these principles formed our foreign policy. Since then, Father Walsh sees neutrality practically abandoned, as we are taking sides with a friend; freedom of the seas gone or suspended; the Monroe Doctrine enlarged to include Canada, Greenland, and possibly the Dutch East Indies; the policy of no entangling alliances practically gone when we consider our promises to Canada and our moral alliance with Britain. In the Far East he sees the open door policy enlarged to the extent that we are, in a way, trustees of the Pacific, and the present guiding spirit in our diplomacy is continental security. Father Walsh is of the impression that we have earned no friends in Europe or Asia and that we should talk more pleasantly to Japan. That his talk was listened to with interest was evidenced from the fixed attention of his listeners and the utter silence of the gathering.

Following the talk an enjoyable dinner was served to the following M.I.T. men and their guests: Granville H. Parks '87,

C. Leonard Brown '88, George W. Stone '89, John G. Crane '90, William B. Poland '90, Walter I. Swanton '93, Minor S. Jameson '96, Proctor L. Dougherty '97, Frederick A. Hunnewell '97, Lyman F. Hewins '98, Thomas M. Roberts '98, W. Malcolm Corse '99, Charles H. Stratton '00, Stanley C. Sears '01, W. Lorrain Cook '03, Merion L. Emerson '04, Amasa M. Holcombe '04, John C. Damon '05, Edward D. Merrill '09, Sarkis M. Bagdoyan '15, Aubrey D. Beidelman '15, Frank E. Richardson '16, Horace M. Baxter '17, Leon L. McGrady '17, Pierre Blouke '19, Louis J. Grayson '19, W. Myron Davy '20, Lyman P. Whitten '20, Lawrence W. Conant '21, Kenneth Bernard '22, George R. Hopkins '22, William K. MacMahon '22, Karl E. Schoenherr '22, Paul J. Culhane '23, William V. Cash '24, Y. Donald Fife '24, John D. Fitch '24, Harry B. Swett '25, Theodore L. Soo-Hoo '26, Ludwig C. Hoffmann '29, Oliver G. Green '30, Jules A. Larrivee '30, Mario V. Caputo '31, Henry D. Randall, Jr., '31, Minor S. Jameson, Jr., '34, Utley W. Smith '35, Marshall M. Holcombe '36, Hughes '37, Sylvester Morabito '39, and Richard L. Steiner '39.

Following the precedent set last year, the Society again held a June picnic — this year on Saturday, the 22d, from 3:00 to 7:00 P.M. — on the property of Mr. and Mrs. Allen B. McDaniel '01 at Waterford, near Leesburg, Va. Allen, during the past year, acquired the Old Quaker Meetinghouse in Waterford, a building about 32 by 75 feet, built of 20-inch local stone walls, and an estate of 160 acres. He has completely remodeled the meetinghouse, replacing the balconies with a second floor and producing a most livable, beautiful country house. He used much of the original material from the meetinghouse interior, finishing the floors with local oak cut near the property, seasoned, finished, and laid to produce a most beautiful effect. The addition of a wing containing a three-car garage and workshop matches the old meetinghouse, so that it looks like part of the original.

The committee on arrangements for the picnic, headed by William C. Mehaffey '17, did an excellent job, furnishing easily followed directions and an attractive announcement which brought forth many Alumni and their families. After last year's experience it was very easy to sell the picnic to those who had made the trip once before. Waterford still looks as beautiful as ever, and the ride is worth the trip.

Again Mr. and Mrs. Edward Chamberlain and Mr. and Mrs. Leroy Chamberlain co-operated, furnishing the use of their grounds for softball, badminton, tennis, and swimming; and the facilities were used with a will. The softball teams started with about five to a side and ended with about fifteen. Teams headed by John D. Fitch '24 and Bill MacMahon '22 put in nine full innings, with a resultant score of about 30 to 28. No one knows which side won, but a good time was had by all. (Undoubtedly many did not have a good time on the following day because we are getting older.) The

children participated to a certain extent in the softball game, enjoyed the swimming pool, and roamed over Allen McDaniel's estate, showing great interest in a runt of a house-broken pig, the chickens, and so on. We hope Mr. McDaniel's animals survived the experience of so much company and attention.

The group gathered on the Old Quaker Meetinghouse grounds in the evening and enjoyed basket lunches with punch arranged by the McDaniels. An excellent program of negro spirituals by Waterford talent wound up the program somewhat after the scheduled hour of seven. While the day threatened rain, the light sprinkle interfered in no way with the thorough enjoyment of the picnic. This affair, which we hope will continue to be annual, has done much to weld the Washington Club into a real organization, and to promote acquaintance and good fellowship among the members and their families.

Joe Houghton '26, chairman of the nominating committee, brought in and railroaded the following nominations into election: President, Merton L. Emerson '04; Vice-President, William K. MacMahon '22; Treasurer, Charles H. Godbold '98; and Secretary, Oliver G. Green '30. As usual, there was no contest for office, the members appearing completely satisfied with the work of the nominating committee.

The following M.I.T. men and guests attended: Frederick W. Swanton '90; Walter I. Swanton '93 and Miss Edith Swanton; Mr. and Mrs. Joseph E. Thropp, Jr., '94; Mr. and Mrs. Joseph W. Clary '96; Nathan C. Grover '96 and Miss Dorothy Grover; Mr. and Mrs. Charles H. Stratton '00 and guests, Mr. and Mrs. W. M. Clark; Mr. and Mrs. Allen B. McDaniel '01 and W. F. McDaniel; Hewitt Crosby '03 and Hewitt Crosby, Jr.; Mr. and Mrs. Harry H. Groves '04 and son, Quenton; Mr. and Mrs. Frank W. Milliken '04; Mr. and Mrs. George H. Shaw '04; Mr. and Mrs. Ben E. Lindsly '05 and daughter, Martha Lindsly Dobey, with her husband.

Also Grosvenor D. Marcy '05 and Oliver Marcy; Edward D. Merrill '09 and Miss Florence Merrill; Mr. and Mrs. George A. Robinson '12; Mr. and Mrs. Benjamin F. Thomas, Jr., '13 and family; Mr. and Mrs. Alfred E. Hanson '14 and family; Mr. and Mrs. Irving B. McDaniel '17 and family; Mr. and Mrs. William C. Mehaffey '17 and family; Mr. and Mrs. Sumner K. Wiley '18 and family; Mr. and Mrs. William K. MacMahon '22 and family; William V. Cash '24; Mr. and Mrs. John D. Fitch '24 and family; Mr. and Mrs. George M. Tapley '24 and Miss Betty Tapley; Captain and Mrs. Charles A. Ross '25; Mr. and Mrs. Joseph Y. Houghton '26 and family; Mr. and Mrs. William K. Cave '27 and family; Mr. and Mrs. George D. Mock '28; Mr. and Mrs. Laurence L. Defabritis '29 and family; Mr. and Mrs. Raymond W. Jones '29 and family; Mr. and Mrs. John A. Plugge '29; Mr. and Mrs. Nicholas P. Stathis '29; Mr. and Mrs. Albert F. Bird '30; Henry D. Randall, Jr., '31 and Mrs. F. H. Randall;

Mr. and Mrs. John Vasta '31 and family and Miss C. Marriale; Mr. and Mrs. Manley St. Denis '32; Mr. and Mrs. Utley W. Smith '35; Toivo V. Kyllonen '40; Robert B. McBride '42, and Miss Anne MacRea Parker. — OLIVER G. GREEN '30, *Secretary*, 11408 Georgia Avenue Extended, Silver Spring, Md. WILLIAM K. MACMAHON '22, *Review Secretary*, 3240 Wilson Boulevard, Arlington, Va.

Worcester County Alumni Association of M.I.T.

The following officers were elected at the spring outing held at the Stow Country Club, Stow, Mass.: President, Carl H. Wilson '34 of Southbridge; Vice-President, Wallace S. Crowell '32 of Fitchburg; Secretary, John A. Swift '27 of Worcester; Treasurer, Robert G. Clarke '35 of Worcester; and Executive Committee, Robert L. Fuller '96 of Worcester, Thomas P. Kelly '18 of Gardner, Herbert L. Hayden '23 of Leominster, Robert J. Proctor '28 of Leominster, and Gordon W. Browne '29 of Worcester.

Current activities will be opened with a Halloween party on Thursday, October 31, at the Svea Gille clubhouse, 196 South Quinsigamond Avenue, Shrewsbury, Mass. A real *smörgåsbord* will be served at 6:30 P.M. Alumni Secretary Charles E. Locke '96 has been invited with another guest speaker. Alumni who may be in Worcester on this date are cordially invited to attend and enjoy one of Worcester's now well-known enjoyable M.I.T. get-togethers. — JOHN A. SWIFT '27, *Secretary*, 1156 Pleasant Street, Worcester, Mass.

CLASS NOTES

1877

The Class invited by their President, Charles A. Clarke, met at the Exchange Club, Milk Street and Battery March, Boston, on Thursday, June 6, at one o'clock to enjoy their sixty-third anniversary. Nine out of a known eighteen responded to the invitation. Seated around the table were William H. Beeching from Winthrop, President Clarke, Joseph P. Gray from West Newton, Byron E. Higgins from Somerville, George W. Kittredge from Yonkers, N.Y., Lucius M. Leach from Bridge-water, Frank I. Sherman from Mansfield, Belvin T. Williston from Somerville, and Frederick W. Wood from Baltimore, Md.

Benny Mudge was invited, but the card was returned marked "wrong address." Since then we have learned he now resides at 117 Clifton Avenue, Clifton, Mass. We hope he will be with us next year. Henry D. Hibbard of Plainfield, N.J., who had intended to be with us, informed us later that he was unavoidably detained. — A photograph was taken of the Class and was sent to each member — a present from our President. On the back of lists of members, each signed his name, and these lists were sent to the absent members of

1877 Continued

the Class. Letters and post cards from absent members were read by those present.

Considering the advanced age of those gathered at this reunion, it was a remarkable group of men. Gray was born on August 6, 1851, and is now in his ninetyeth year. Williston, born on August 20, 1853, is now in his eighty-eighth year. Clarke, born on September 13, 1854, is now in his eighty-seventh year. Kittredge, born on December 11, 1856, is now in his eighty-fifth year. Clarke is still active in business, while Sherman does surveying. Gray fell and fractured a hip, but now walks with the aid of a cane. — We wonder each year how many will meet at our next reunion.

I recently received a letter from William L. Hallett, then of Denver, Colo., informing me of his intention to move to New York. His residence now is 49 East 19th Street, Brooklyn, N.Y. — BELVIN T. WILLISTON, *Secretary*, 3 Monmouth Street, Somerville, Mass.

1883

We are indebted to Edward A. Weissbach '16 for the following comment from the Cincinnati *Enquirer* of July 19. "Gustave W. Drach, dean of Cincinnati architects, died . . . at the Hamilton County Tuberculosis Sanatorium, the original buildings of which he designed. He was 78 years old. Mr. Drach, who lived at 3300 Jefferson Avenue, had been in the sanatorium only nine days. Shortly before he had closed his offices in the Union Trust Building. During his long career, he designed some of this city's most widely known structures, including the Hotel Gibson, Good Samaritan Hospital, Woodward High School, and Textile Building. He was also architect for the Neil House, Columbus. Only a few months ago, with Harry Hake and Joseph G. Steinkamp, he was honored at a testimonial dinner by the local chapter of the American Institute of Architects.

"Mr. Drach was born in Cincinnati. He attended the public schools, being graduated from Woodward High School in 1879. The next two years he passed in the office of George W. Rapp while he studied in the architectural department of Ohio Mechanics Institute. In 1880, he received a bronze medal, the highest award of the department. Next he took a special course at Massachusetts Institute of Technology. As a reward of merit, he was assigned to the office of Cummings and Sears, prominent Boston builders. A year later he was called to New York to Herter Brothers, designers of interiors of some of the finest old residences in the metropolis. Returning to Cincinnati in 1884, he practiced his profession here continuously with the exception of several years devoted to travel and study in Europe.

"Surviving Mr. Drach, whose wife died recently, are two sons, Karl G. and Edgar W. Drach ['17], and a granddaughter, Mary A. Drach, all of Cincinnati." — HARVEY S. CHASE, *Secretary*, 431 Chase Avenue, Winter Park, Fla.

1885

The Broken Hill Proprietary Company, Ltd., of Australia publishes *The B. H. P. Review*. Its June issue contained the following article: "On June 2 of this year, the Newcastle (Australia) Steel Works completed twenty-five years of operation. . . . Examination of . . . factors in relation to the Newcastle Steel Works gives a graphic picture of what twenty-five years in its history has meant in terms of development and national service.

"Possession of the wonderfully rich and extensive iron ore deposits prompted the B.H.P. board of directors to consider ways and means of utilising this asset to the greatest possible advantage. In August, 1911, Mr. Delprat was given the task of investigating iron and steel practice abroad, and engaging an expert to visit Australia and advise on the project.

"Mr. David Baker, of Philadelphia, U.S.A., was chosen by Mr. Delprat to lay the foundation of the iron and steel industry in Australia. The wisdom of the selection was reflected in the results obtained. Together, these two men played leading parts in the inauguration and early development of the Newcastle Steel Works, an enterprise destined to become one of Australia's greatest industries.

"Mr. Delprat and Mr. Baker met in New York, towards the close of 1911, when the latter expressed his willingness to visit Australia, make an examination of the proposed industry's prospects, and answer the question: 'Could steel be made from the Company's ore and at a cost that would make the undertaking profitable?' As we are well aware today, Australia's industrial destiny depended largely on Mr. Baker's answer. He gave an emphatic 'Yes' to the Board's momentous query, and with typical courage and resolution Mr. Baker backed his answer with his acceptance of the Board's invitation to him to become the Steel Works' first manager. The tremendous task shouldered by Mr. Baker embraced the furnishing of plans and estimates supervising the construction, and, after completion, organising and starting operations continuing the management and training Australians so that they could eventually carry on the Works.

"Mr. Baker brought to the position a wealth of knowledge, rare energy, and breadth of vision tinged with genius. During his regime as manager, he laid the material foundations and the far-sighted policies from which has developed the Newcastle Steel Works as we know it. . . .

"Mr. Baker, now in retirement in Massachusetts, U.S.A., sent the following message to Mr. Essington Lewis on the occasion of the Steel Works' first twenty-five years: 'Heartly congratulations for your quarter century of achievement in iron and steel.'" — ARTHUR K. HUNT, *Secretary*, 145 Longwood Avenue, Brookline, Mass.

1887

The annual class dinner was held at the Parker House, Boston, on Sunday, June 2. Fifteen members, the same number as

in 1939, attended. Grouped around the table were President Taintor, Very, Cameron, Lane, Green, Carter, H. E. Smith, Tripp, Douglas, W. H. Brainerd, W. R. Thomas, Blake, Cushing, Kendall, and Cole. Discussion of current topics — principally the present war — was indulged in by President Taintor, Cameron, Vice-President Cole, Treasurer Ben Lane and others, all of which furnished a very pleasant and entertaining evening and one that was thoroughly enjoyed by all.

At the Alumni Day exercises in Cambridge on Monday, President Taintor, W. R. Thomas, Tripp, Green, Carter, Cole, Lane, Kendall, and Very were present to enjoy the speaking and luncheon and to meet Miss Sprague, sister of our deceased classmate Timmie Sprague. Despite her eighty years Miss Sprague is very active and is, as always, deeply interested in her brother's classmates. Through the courtesy of Lonsdale Green, she was afforded an opportunity to be photographed in the group of '87 men present and was immensely pleased at the attention accorded her. — The same nine men attended the alumni dinner in the evening.

Since the writing of the class notes for July, news has been received of the deaths of two men who were affiliated with the Class. Charles E. Bockus of New York and Arthur S. Williams, VI, of Newton Highlands, Mass., who entered with our Class but was graduated with '88. A sketch of the career of the former, taken from the August issue of *Mining and Metallurgy*, is as follows: "Charles E. Bockus, president and chairman of the board of directors of the Clinchfield Coal Corp., died June 29 at his home, 975 Park Ave., New York City, at the age of 71 years. Born in Dorchester, Mass., July 10, 1868, he was educated at the Boston School of Mechanic Arts. During the World War he served with the U. S. Fuel Administration, and in 1922 was chairman of the advisory coal board of the Department of Commerce. In 1935 he was deputy district secretary for the New York area under the 'little N.R.A.' for coal. He was also chairman of the board of directors of the Clinchfield New York Corp., and a director and former president of the National Coal Association. He began his career as a writer for *The Boston Herald* and was with several firms before he became vice-president of the Clinchfield Coal Corp. in 1913. He held that position for one year before he became president. At the time of his death, Mr. Bockus was president of the Big Sandy Fuel Co. and chairman of the board of directors of the Port of Ascension Concession Corp., along with several other positions."

The Secretary received a note from Arthur Williams in April, asking if the Class would like for its archives a photograph of the members of the Society of '87 taken on the steps of the Walker Building. The offer was promptly and gratefully accepted. Shortly after this incident and without hearing anything further from the donor, your Secretary was greatly shocked to read of our former classmate's death on May 18.

1887 Continued

Arthur was well known and greatly liked by his associates in '87, whose sympathies go out to his family in their sorrow. It may be of more than passing interest to say that your Secretary varied his somewhat monotonous career by a two-and-a-half week's sojourn at the Salem Hospital, at the suggestion of the family physician, where he underwent a surgical operation which proved very successful, and after a complete summer's rest and quiet he is back on the job once more.

Herbert Wilcox came East this summer with Mrs. Wilcox but did not reach Boston in time for the class dinner, much to the regret of all. He spent one night in Boston a short time later, however, and entertained Winthrop Cole and the Secretary at dinner at the Boston City Club. Herb seems to be taking life easily and quietly, with ample opportunity for travel; we hope to have him with us again in 1941. He has since written that he enjoyed his trip East very much. At Daytona Beach, Fla., he met Frank Solomon, who recognized him at once after a lapse of more than forty years; he also had lunch with Frank Shepard in Denver. — Arthur Nickels spent a few days in and around Boston on his return from Florida last spring and says that he was in Washington at the same time as Wilcox. He wrote that he planned to spend August as usual at the family resort at Pond Island.

Lonsdale Green writes from Chicago that he reached home safely after his visit to Boston in June and was glad that he came East. — Frank Brett reports a very enjoyable summer at his Duxbury farm. He played golf every day with an old friend from the University of Minnesota. He also enjoyed a delightful trip through the White Mountains and Crawford and Franconia notches. He took in the Mount Cannon tramway, the ski tram, and indulged in several games of golf at the Laconia Country Club. — A note of good wishes was also received from George Sever in Kingston, who appears to be able to be up and around as usual. George apparently "never cares to wander from his own fireside" as the old song goes. To see him in person, therefore, requires a journey to his native heath, something that the Secretary hopes to accomplish in the near future.

Mrs. Granger Whitney writes that she is planning to give up the Red Oaks Orchard, as the care is too much for her, but that as yet her plans are not definitely made. Her interest in Granger's Class continues unabated, and the '87 class notes in *The Review* are still followed as the months roll around. — A recent letter from Squash Cushing told of an unfortunate accident which necessitated a sojourn at the Goddard Hospital in Brockton — he had broken his right shoulder — but he was getting along nicely at the time he wrote and was due to leave the hospital in early September. He reports that business has been wonderful with him, and this fact seems to have endowed him with renewed courage that his misfortune cannot seem to dampen. Nothing so essential to success and

happiness as *courage*, especially at seventy-five. — Dick Schmidt regrets his inability to be with the boys for the June festivities but says that his loss has been partially indemnified by letters and clippings from Lonsdale Green and the official program of Alumni Day mailed him by the Secretary. — Apparently Henry Hill, who appears all too infrequently at our class functions, is a bit disturbed by the unsatisfactory conditions in the hunting and fishing line, as he discloses the fact that the season on woodcock is limited to two weeks this year and that the brook fishing has been poor. Too much water the first of the season and too little the last, he says. Other than that, he appears to be in his usual good spirits.

In response to the notice of the dinner in June, George Sylvester wrote from Rockwood, Tenn.: "Was glad to get the notice of the class dinner and reunion, and to see the list of familiar names signed thereto. I regret that I am too far away to be with you this year, but send you greetings and best wishes for a good time. I have very pleasant memories of the few occasions when it was my privilege to meet with you. While I am a long way from M.I.T., both in distance and time, I still hold my membership in the M.I.T. Club of East Tennessee and was able to attend their annual meeting. There were about twenty-five present, all M.I.T. men. While I was at Tech too long ago to have much active interest with them, they always give me a cordial welcome, and I like to meet with them when I can." — NATHANIEL T. VERY, Secretary, 15 Dearborn Street, Salem, Mass.

1888

Eight days after sending in our July notes with Ted Foque's letter as the leading feature we received the following from Ted: "Tear up that letter because, after thinking about it some more, I have decided to go to Boston for the dinner at Webster's. . . ." Ted traveled 1,600 miles from Wayzata, Minn., just to be present at our fifty-sixth class dinner and the twelfth at President Webster's in Chestnut Hill. Four days before June 2 we had had only fifteen acceptances, but when we counted noses in the midst of Ned's wonderful orchids we found that there were twenty-three present, the same as the year before and within two or three of our maximum for this greatest of all class events during the last twelve years. Those present were Henry Bates, who celebrated his golden wedding last April; Herbert Bird of Brooklyn, who nearly got lost coming through Boston; Luther Bridges, who is always glad to be with '88 men; John Cavanagh, whom nobody knew because John had not met with his classmates for fifty-five years, and who promises next year to bring Donald Blair, our first Class President; Bert Collins, the only man from the "state of Maine"; Arthur Conner, the only man from New Hampshire, Henry Eastman, the grand old man of the Class, eighty years young and a descendant of the man of mighty brain, Daniel Webster;

Fred Ellis, the champion knocker-outer of the Class; John Faxon, the silver-tongued poet; Charlie Faunce, chief engineer of all the '88 clambakes since the first one in Duxbury in 1918 at our thirtieth reunion; Ted Foque, long-distance medal winner; George Hamblet, runner-up to President Webster in greatest number of grandchildren — eleven — whereas Ned has an even dozen; Ulie Holman, most active in outside activities during our four years at Tech; Bert Mead, quietest man in the Class; Ralph Reynolds, always on hand at class reunions; John Runkle, connoisseur of antique homes and worthy son of a great father; Ivar Sjostrom, well versed in the wool and textile industries; Everitt Taylor, noted architect, artist, and etcher; Sanford Thompson, consulting engineer and golfer; Ned Webster, financial executive and originator of Webster Class Dinners; Smoky Joe Wood, colonel and baseball pitcher extraordinary; John Linzee, civil engineer and internationalist; William Atkinson, architect and industrialist.

Of the eighty-five names on our class roster, twenty-five are never heard from, but we received replies to President Webster's invitation to the class dinner from forty-five, or 75 per cent, of the sixty who answer letters; of these, twenty-three, or 51 per cent, came — not bad for a group of seventy-four-year-olds. We had four acceptances beside those who came, which would have swelled our number to twenty-seven. They were from Besler, Buttolph, Horn, and Lee. Besler, like the thoroughbred railroad man that he is, sent in his schedule of departures and arrivals for the round trip from New York to Chestnut Hill, but on the day before the dinner he wired both Ned Webster and your Secretary that on advice of his doctor he must forego attending the class dinner and sent his best wishes with the confident expectation to be with us next year. Buttolph, in spite of the fact that he had moved to his summer home at Saundertown, R.I., on May 24, after breaking up his establishment of twenty-nine years at 315 Thayer Street, Providence, expected to be present but, on account of the transportation problem, had to give it up. Major General Horn of Siberian fame wrote that he was going to Webster's and would again see the naval secretary with decks cleared for action; but a call on Mrs. Horn with Colonel Thompson one afternoon revealed the fact that Harry was in the hospital because of working too hard helping his wife and daughter prepare for a dinner for their club. The doctor expected him to be out and around as usual in three or four days, although Horn was threatened with pneumonia. George Lee wrote that he had not been very well for the last three months but if nothing happened to prevent, he was going to try to be present at Chestnut Hill on June 2. When we arrived at Webster's, Ned said that he had just received a message from the hospital that Lee could not come.

1888 Continued

Annie Sabine and Marion Talbot, our only two coed classmates, wrote from Columbus, Ohio, and Chicago, Ill., respectively, and in the words of Annie Sabine said: "I do regret greatly that I cannot again meet Mr. Webster and my other classmates, recalling our very pleasant years at Tech." Ned's desk in chemical lab was next to dark-eyed Annie's and Ned was a veritable prince charming in those days, as we all know. — Dwight Perkins wrote from Evanston, Ill.: "No, I cannot come; Chicago is too far away. I did take that long ride from Pasadena, Calif., to Marblehead once in my life (our fiftieth) and you gave me the long-distance badge as a result. But I shall not do it again." — Fred Ellis wrote: "I will be at the dinner and so will Ted Foque. I will see that Eastman gets there, too." And the grand triumvirate named were there and had the time of their young lives.

Everitt Taylor had the — not nerve but courage — to address your Secretary at *Shebang* Island, Maine, but he evidently counted on the erudite postal clerks in this state, for the letter arrived without delay. Everitt gave me a catalogue of his etchings now on exhibition in his studio. They are all very artistic, but the one that appealed to me most was "The Square Rigger," for it shows the type of sailing ship in which Johnnie Runkle undoubtedly sailed around the world after finishing his course at Technology. Among others are "Jupiter Olympus," "The Blue Mosque," "La Casa de las Conchas," "El Colgio Viejo," "The Rialto," "The Prudential Fountain," "Galen Stone Tower, Wellesley," "Old Rogers, M.I.T.," and "The Towers of San Gimignano." If you are interested, Everitt will tell you more about them. — Edward M. Smith missed the Webster dinner because he had to attend a committee meeting of the American Railway Engineering Association in Ashland, Ky.

Billy Dearborn, the best all-round athlete in our Class, wrote that he wanted to take Mrs. Dearborn on a motor trip down the coast of Maine in the summer when the weather is best and free of fog. That was quite a large order, as we claim very low efficiency as a weather prophet. However, since we wanted to see Billy after a lapse of fifty-three years or more, we made a guess that the latter part of July would be as good as any time. Franklin Henshaw, manager of the water department, Scarsdale, N.Y., says: "It seems that my record of nonattendance at class reunions must continue 100 per cent absence. It has been so perfect in that respect that I do not believe a single member of the class except Ned Webster would remember me at all." — Charlie Faunce, *maitre* of the clambakes, is probably the most active man in the Class. Last spring he took three men to help him and went just outside of New Bedford and in three days' time built a house, complete in every way. I will venture to say that Charlie did more work than any two of the other three. — We are sorry to say that we heard that Eddie Fuller of Worcester is in

poor health, being obliged to spend three days of each week in the hospital. We hope later reports will be more cheering.

A birthday dinner in honor of Nathaniel I. Bowditch of Framingham, Mass., for forty-four years a trustee of Massachusetts State College, was held on July 25 at the state college. Governor Saltonstall headed the list of prominent guests. The dinner was in connection with the annual Farm and Home Week program at the college and was in recognition of Mr. Bowditch's long and active service to agriculture and to education in Massachusetts. For many years Bowditch has served as patron of the state 4-H Clubs, president of the Middlesex County Extension Service, and county commissioner for Middlesex. He was first appointed a trustee of Massachusetts State College in 1896 by Governor Fredric T. Greenhalge. He has been reappointed six times and has served through the administrations of eighteen governors.

It is our sad duty to report the death of our classmate Louis Aloysius Ferguson in a Rhinelander, Wis., hospital on August 25. His son Louis, Jr., '17, wired President Webster at his home in Chestnut Hill that Ferguson had passed away suddenly and that the funeral was to be in Evanston on August 28. Webster immediately sent flowers from Mrs. Webster and himself and notified the Secretary at his summer home on the coast of Maine, but it was too late to send flowers from the Class.

Louie Ferguson, as all his classmates called him, entered the Institute from Dorchester. He was a brilliant student and was graduated in Electrical Engineering. Within a month of graduation he started with the Chicago Edison Company in the meter department, then went with the underground department, and in 1892 was appointed electrical engineer of the company. In 1897 he was promoted to general superintendent. In 1898 he was sent abroad to investigate electrical progress in England, France, Germany, Switzerland, and Austria. From 1908 until his retirement in 1936 he was vice-president in charge of engineering and construction of the Commonwealth Edison Company, Chicago.

Ferguson was president of the American Institute of Electrical Engineers in 1908-1909 and of the National Electric Light Association in 1902-1903. To him belonged the credit of being the first central-station engineer in the United States to recommend the system of generating three-phase alternating current for distribution over transmission lines to substations containing rotary converters to transform the energy into direct current for general distribution.

Surviving are a daughter, Mrs. Henry Butler of St. Louis, Mo., and three sons, Louis, Jr., of Lake Forest, Arthur J. of Winnetka, and Alan M. of Washington, D.C. He had a large number of grandchildren, photographs of whom he showed all those present at our class dinner at Ned Webster's in June, 1937, when he came on from Chicago especially to be present at our forty-ninth reunion.

At our grand fiftieth at Marblehead the following year he was one of the most prominent of those present. He will be missed at future gatherings of the Class, but his memory will linger on. — BERTRAND R. T. COLLINS, *Secretary*, 57 Wiggins Street, Princeton, N.J.

1889

June 3 was the day and four to seven were the hours when a dozen of the '89 clansmen assembled at the Secretary's home on West Cedar Street for a season of spiritual conversation and spirituous refreshments. All seemed to enjoy the occasion which, sandwiched between the more impressive formalities of Alumni Day, provided an opportunity for maximum relaxation with a minimum of effort. Bliss, Bridges, Cutter, Fiske, E. V. French, Gleason, Howard, Kilham, Kinsman, Lewis, Mott, and W. L. Smith showed up along with Charlie Locke '96 who dropped in for a short time. All seemed to think the meeting was a good idea. — The Bosworth family arrived safely on this side on the S.S. *Manhattan* and are at "Old Trees," Locust Valley, N.Y. — Zenas was in Texas last winter and liked it. He says the gin fizzes of New Orleans, which he sampled on the way, are as good as ever, and Zenas knows. — WALTER H. KILHAM, *Secretary*, 126 Newbury Street, Boston, Mass.

1891

An outing was held at The Country Club in Brookline on Thursday, June 20. President Henry Bradley made the arrangements for us. There were twelve present: Bradlee, Bowen, Brown, Damon, Dana, Fiske, Forbes, Howard, Ryder, Warren, Wilder, and Young. It was nice to see Joe Warren again. We missed George Vaillant, who was unable to attend. Fred Blanchard wrote that he was getting better but could not be with us, much to his regret. Jim Swan wrote from Washington that he was having trouble with his eyes but hoped to get fixed up shortly. Sorry he could not be with us. Regrets and best wishes were sent from George Atkinson, Edward Earl, Horace Ensworth, Arthur Hatch, Will Lawrence, Clouston Moore, John Putnam, Ambrose Walker, and others. We had a letter from Ed Smith saying he might come if he knew how to get to the club, so your Secretary sent him a diagram. Perhaps he got lost; how about it, Ed?

We began to congregate soon after 4:00 p.m. It was too cold to sit outdoors for long, although a nice day otherwise. Not having Fred Blanchard to enthuse us for a few holes of golf, your two officials decided to forego this strenuous exercise and wait for our fiftieth. The men's room proved cozy and comfortable, and we swapped ideas, aided by some liquid refreshments, until dinnertime. After one of the fine dinners which this club knows how to provide, we discussed a few class matters. Lin Damon has made reservations at the Corinthian Yacht Club for our fiftieth anniversary party, and we again agreed that this was a good place

1891 Continued

to go — conveniently located right on Marblehead Harbor. So we are all set, even though we do not know the exact date. This next year we are asked to hold our reunion just before Alumni Day, so that as many of us as possible will be in Cambridge to take part in alumni festivities. Presumably, Alumni Day will be June 9. — A committee has been appointed for our fiftieth anniversary with Harry Young as chairman. You will hear from him in due course. We shall handle it somewhat as we did our forty-fifth: arrange for a fiftieth anniversary class fund, send out questionnaires, and have a fiftieth reunion book. Give us some ideas.

Harry Young brought our class flag, which was displayed as usual. He has done a good job as flag custodian, a life appointment. — After the dinner Henry Fiske showed some interesting Kodachrome stills from his varied collection. He has a balcony on the seventh floor, facing west, so is all set whenever the sunset comes along. Taking colored stills is a most interesting hobby and it's easy to get good results with a reliable light meter. — We had a pleasant evening, even if our number is growing smaller. We shall expect a full attendance at our fiftieth.

We regret to report the death of Mrs. George A. Holmes on September 10. She had not been well for some time, and since George's death had lived at their home with an unmarried daughter. — A letter from Ed Smith expresses sentiments with which we shall all agree: "We are facing heavy weather — spiritually, economically, and politically in a broad sense. It is appropriate for '91 to get together, recall the days of undergraduate life, ponder both on our accomplishments and on those of Technology through the intervening years, and make known our faith that M.I.T. in the future, as in the past, can deal competently and adequately with whatever problems may confront us or the United States. We are fortunate and the country is fortunate in the masterful leadership of President Compton." — Ed recently announced the marriage of his daughter Marjorie to Dudley Pettinger of New York City.

Barney Capen is still at the Early Convalescent Home in Cohasset. We hear from him less often, as it is difficult for him to write letters. This fact accounts for lack of news for our Review notes, as we used to have many replies to his letters and post cards. — Gorham Dana spent the summer at his home near Lake Sunapee, N.H. His hobby is photographing and feeding hummingbirds, which latter should not be expensive. — Eli Bird is still with the *New York Times*. We know he will wish to serve as class artist for our fiftieth anniversary.

Charlie Ricker called on us this summer, and we had dinner together. He was in Havana last winter doing consulting work for the power and light company, and enjoying playing host to his friends who visited Havana. He spent the summer at North Conway, N.H., where he is a

devotee of mountain climbing. Says he can still show the younger generation how it should be done. — Charlie Wetherbee's old company, the Bath Iron Works, is busy and expanding with navy work. Charlie was outstanding in his line of endeavor and will be greatly missed, especially at a time when we need that kind of expert knowledge. — Harry Young spent part of the summer at Marblehead, camping out, he says, in a small cottage with Mrs. Young. — Charlie Garrison wrote that he was coming East this fall, motoring across the country as usual. We hope this will not interfere with his attendance at our fiftieth. — F. Clouston Moore shows up in Boston every few months visiting his sister. He is a lot thinner than he used to be, but looks fine. Still thinks Arizona is a great winter resort.

Your Secretary was appointed chairman of the fiftieth anniversary committee of the Phi Beta Epsilon Fraternity. The anniversary festivities were held at the Hotel Preston, Swampscott, Mass., from May 30 to June 2. About 190 attended, and it was a grand party. Walter Hopton was active in rounding up members, and he and Mrs. Hopton attended the luncheon at the fraternity house. Mrs. Fiske and your Secretary's two daughters, Mrs. Cass and Mrs. Howe, also were present. Giff Thompson could not attend on account of illness, but arrangements were made for him to speak at the banquet, via phone and loud-speaker. Fred Cole has disappeared (his home was in Rochester) and a six months' intensive hunt failed to locate him. We will keep on trying with the hope that he will come to the Class's fiftieth. Charlie Aiken was greatly missed, as he was a member of our fraternity and had been toastmaster at our banquets, entertaining us with his stories.

The following changes in address have been received: Walter B. Douglass, 12 George Street, Belmont, Mass.; Dr. Margaret E. Maltby, 2449 Pacific Avenue, San Francisco, Calif.; George D. Rogers, 31 State Street, Boston, Mass.; Charles W. Ricker, 2257 Grandview Avenue, Cleveland Heights, Ohio; Professor Arthur C. Smith, 2116 Knapp Street, St. Paul, Minn. — *Remember our fiftieth in June, 1941.* — HENRY A. FISKE, Secretary, Grinnell Company, Inc., 260 West Exchange Street, Providence, R.I. BARNARD CAPEN, Assistant Secretary, Early Convalescent Home, Cohasset, Mass.

1893

Mr. and Mrs. Jesse B. Baxter of Milton, Mass., announced the marriage of their daughter, Mary Woodbury Baxter, to John Warner Foley, Jr., on June 1. Since 1927 Baxter has been president of the Blue Hill Bank and Trust Company of Milton; the home of the Baxters is at 175 Edge Hill Road, East Milton.

Within seventeen days last summer the Class lost four of its former members: Charles E. Belcher, Charles R. Boss, Nathan P. Cutler, Jr., and Frederic B. Abbott. — Charles Edwin Belcher, a member of the Class during the freshman year, died on August 26. He was presi-

dent and owner of the Standard Publishing Company of 141 Milk Street, Boston. It was on the *Standard*, an insurance journal, that Belcher began his career as a reporter in 1892. Six years later he became an official in the company, rising to the presidency in 1911. His home was at 624 Beacon Street, Newton Centre. In 1901 he married Miss Florence E. Bear, who survives him.

Charles Royce Boss of New London, Conn., died at Wallingford on September 1 after a year's illness. A native of New London, he took Course IX with the Class, receiving his degree in 1894. While at Technology he was a member of the track team, specializing in the 100-yard dash. Following his graduation he entered the biscuit business with his father in New London but after a few years became connected with A. B. Leach and Company, investment bankers of New York, at their New London office. In 1924 he resigned to open his own office as investment counselor, from which calling he retired not long ago. He was active in municipal and civic affairs, having served as alderman and acting mayor of New London and a member of the Connecticut General Assembly. During the World War he directed the liberty loan campaigns in eastern Connecticut as Red Cross committee chairman. He was a Freemason and for years maintained his membership in several businessmen's and country clubs in Connecticut and Rhode Island, golf being his hobby. Besides his widow, Mrs. Hal N. Boss, he leaves a son by an earlier marriage, Charles A. B. Boss.

Nathan Pearson Cutler, Jr., died on September 10 of a sudden heart attack while vacationing at Whitefield, N.H. His home was at 51 Shornecliffe Road, Newton, Mass. For many years Cutler was located at Haverhill, Mass., where he was connected with the Haverhill Blacking Company, manufacturers of stains and blacking for shoes. In 1927 he joined the Zarex Company of Boston, manufacturers of food products, of which he was treasurer until 1932. Later he became a member of Davis and Cutler, Inc., food brokers, at 89 Broad Street, Boston. For the last few years Cutler had not been active in business. Having no children, he and his wife, Mrs. Edith T. Cutler, spent a good part of their time in foreign travel.

Frederic Bassett Abbott of Lynn, Mass., died at his home, 27 Nahant Place, on September 12. Born in Lynn on October 23, 1870, he had always made that city his home. Although a graduate in Electrical Engineering, he was engaged in Lynn's important industry of shoe manufacturing from 1893 to 1901. In 1902 he became connected with the General Electric Company as assistant engineer in the drafting department at that company's river works at West Lynn, where he remained until his retirement about eight years ago. He was a member of the American Institute of Electrical Engineers and also was active in political circles of his native city. In 1900 he married Miss Alice Goodsell

1893 Continued

Dunn of Lynn. Surviving him are his wife; three daughters, Miss Elizabeth Abbott of Evanston, Ill., Mrs. A. H. Rice of Goffstown, N.H., and Mrs. W. C. Pirie of Swampscott, Mass.; and two sons, F. Everett Abbott of Short Hills, N.J., and Lewis D. Abbott of Lynn. — FREDERIC H. FAY, *Secretary*, 11 Beacon Street, Boston, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 551 Tremont Street, Boston, Mass.

1895

When history records the great events of 1940, it will include the forty-fifth reunion of the Class of 1895, M.I.T., at the New Ocean House, Swampscott, Mass., on June 1 and 2. Each five-year reunion is bound to reflect the effect of world affairs, business, politics, the strengthening of friendships, and the like, and this reunion was true to form, though with less frivolity and more numerous and intensely interesting bull sessions.

Fred Cutter from New York was the first to arrive, followed by your Secretary and Mrs. Yoder, constituting a reception committee to greet Mrs. Cutter and Mrs. Humphreys, John and Mrs. Moore, and Jack Gardiner — all from New York, who arrived late that stormy Friday night, glad to be safe within the comfortable atmosphere of the New Ocean House. Good weather followed the storm, and Saturday and Sunday proved to be most delightful days for our reunion.

Saturday brought the Aldens from Connecticut; the Booths from Boston; the Dickermans with their youngest daughter from Chevy Chase, Md.; Sammy and Mrs. Hunt from Manchester, N.H.; the Jacksons from Concord, N.H.; Walter and Mrs. Williams from North Dighton, Mass.; Ben Adams and Miss Boffenmeyer from Philadelphia; Eugene Clapp from Boston; Sidney Clapp from Kingston, N.Y.; Bill Winkley from Medford; and George Cutter from Dedham. Mrs. John C. Wolfe came by train from New York City; Harold Barrows, from Boston. George Hayden and Edward Tucker, both from Winchester, Mass., were on hand for the Saturday luncheon only. Walter A. Hall of Boston, Richard H. Rich of Clinton, Conn., and Frederick L. Richards from Somerville, Mass., attended the banquet Saturday night. — During Saturday morning Azel Ames of New York, Charles Tillinghast of Providence, and Andy Fuller and George F. Shepard of Boston called at our hotel to greet the assemblage, but could not remain because they had to officiate at the fiftieth anniversary of the Phi Beta Epsilon Fraternity, which was in session at the Hotel Preston. Lat Ballou of Woonsocket, R.I., could not appear until Sunday dinner, following which he collaborated with all the boys and girls and then left by auto for his home.

The scheduled program for the reunion consisted of the luncheon Saturday noon and the banquet Saturday night. All were so completely engaged in felicitating each other that the golf links and the ocean

bathing were not at all patronized. Everybody seemed to have a good time enjoying the ocean views and attending the impromptu bull sessions. Henry Jackson was official photographer and took some splendid color-movie shots of the principal features of the reunion. The class meeting, brief and to the point, was held after the luncheon on Saturday. Tommy Booth presided. Reunion communications were read and Treasurer Yoder reported that the Class was still in the black, and that 67½ per cent of the original graduates of the Class were still aboveground. The banquet was served in the Priscilla Room, where photographs and mementos of past reunions were exhibited. Our host served an unsurpassed feast and the fellowship was delightful, as all speeches were barred. A number stayed through Sunday and attended the exercises in Cambridge on the following day.

Gerry Swope made complete arrangements to attend the reunion but at the last moment was compelled to cancel his plans because of the present national emergency. This was a great disappointment to all those who did attend, and deeply regretted by him. Gerry has always been, and still is, one of our most consistent class enthusiasts and the boys always enjoy him. Al Zapf of Orange, Calif., remembered the occasion by a letter with best wishes to all. Henry Yoerg of St. Paul, Minn., planned to be with us but for some unknown reason did not get to Swampscott. Gus Clapp of Framingham Center, Mass., Francis Faxon of Wappingers Falls, N.Y., and Win Parker of Boston were on the sick list. Business engagements interrupted the plans of George Bixby of Detroit, John W. Cooke of Erie, Pa., and George Nichols of Garden City, N.Y. We missed the genial smile of Ira Nay, who hails from Auburn, Maine. Ira had sickness at home and could not be with us. The reunion was a most delightful and memorable gathering. We are now looking forward to the fiftieth. A review of the dates and places of our regular five-year reunions brings back memories: The fifteenth was held at Ashland, N.H.; the twentieth in 1916 at Swanzy, N.H.; the twenty-fifth at Saybrook, Conn.; the thirtieth and the thirty-fifth at Plymouth, Mass.; the fortieth at Osterville, Mass.; the forty-fifth at Swampscott, Mass.; the fiftieth in 1945 at — who knows?

The Technology banquet at the Statler Hotel, Boston, on June 3 was attended by Alden, Booth, Eugene Clapp, Hunt, Hayden, Jackson, Sherman, Walter Williams, and Yoder. — Francois Matthes resumed his geologic research in California last June. He tells us he is still riding mountain trails and climbing peaks, and enjoying it. He sleeps under the stars. Hopes to see the boys at our fiftieth reunion. — Last May we had a letter from David B. Weston from the Mene Grande Hospital, Maracaibo, Venezuela, as follows: "I had my affairs all arranged to permit me to attend the forty-fifth reunion, but in April I was taken ill and have been in a hospital in

Maracaibo since that date. Perhaps I will get out the last of June; and as soon as I can climb aboard a clipper I will start for the U.S.A. If I get there I will surely be interested in checking over events of the last decade, because since leaving Cuba I have really been out of the world and seen few of the Class, many of whom have checked out no doubt. — Down here we cannot even buy dollars to get home with. Bolivars can be bought only in limited quantities. Petroleum controls this country." — Dave has finally reached home at 20 Glendale Road, Sharon, Mass. He may have some interesting experiences to tell us later.

Edwin Tilson Hoisington, I, passed away at his home, 5 Grayfield Avenue, West Roxbury, Mass., July 29. Hoisington was a Vermonter, born in 1872 in Hartland, where he has been buried. Following graduation he was employed by Boston as civil engineer on highway construction and served as such for forty-four years until his retirement in September, 1939. In 1923 he married Viola Daggett of Castleberry, Ala., who survives him. — From the Boston *Herald* we learned that William Huntington Parker, VII, died on June 11. Parker was with our Class for a year but did not affiliate with us until 1934. His business address was Charles Pfizer and Company, Inc., 11 Bartlett Street, Brooklyn, N.Y.

Gustavus Clapp, IX, died on June 21 at his home, 1296 Worcester Road, Framingham Centre, Mass., and was buried there at Edgell Grove Cemetery. After leaving Technology he was employed for four years by the Nonantum Worsted Company, Newton, Mass. His next employment was with the Sturtevant Mills Company of Dorchester, Mass. He resigned from this work at the death of his uncle and became secretary to his aunt, with whom he lived. He managed the affairs of the estate, spending his summers in St. Augustine, Fla., and his winters in Framingham. Gus never married. For many years he was overseer of the estates of his relatives. He was much interested in class affairs, and attended functions whenever able. During his illness he became totally blind. His passing is regretted by his many friends and acquaintances.

Walter C. Marmon, II, a leader in industrial, civic, and charitable pursuits in Indianapolis for many years, died August 29 at his home in Brendonwood, following a long illness. He was born in 1872, attended public schools in Indianapolis, and attended Earlham College before coming to Technology. His father was interested in the Nurdyke and Marmon Company, which manufactured milling machinery. In 1902 this company started making the Marmon automobile — one of the pioneers in an industrial field that later was to encompass the nation. Walter stepped into important positions in the organization, although previously he did millwright work for the Nurdyke and Marmon Company. He was secretary of the company until 1909, when his father died, and then became president until 1924. In 1926 the milling interests were

1895 Continued

sold and the company was reorganized as the Marmon Motor Car Company. In 1931 this company was reorganized as the Marmon-Herrington Company, Inc., and Walter became chairman of the board. He was also president of the Noblesville Milling Company, and formerly held the chairmanship of the Indianapolis Power and Light Company. He found time to contribute greatly to the betterment of his city as general chairman of the Community Fund in 1928 and 1934. Marmon had taken an active part in development of the Boy Scout program in Indianapolis and was one of the leaders responsible for its excellent status in nation-wide scouting circles today. He was former president of the Indianapolis Scout Council. He was a member of the Woodstock and the Columbia clubs, the Indianapolis chapter of the Citizens' Historical Association, and the Second Presbyterian Church. Further testifying to his versatility was the fact that he owned an eighty-acre Marion County poultry farm. We all knew him as a most genial fellow, athletic and democratic. We shall miss him.

We have just learned of the passing of Maurice LeBosquet at his home in Honolulu, T.H. Further details may come later. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass. JOHN H. GARDINER, *Assistant Secretary*, 10 Clinton Place, Mount Vernon, N.Y.

1896

Alumni Day last June was a continuation of the success of previous observances and brought out a good delegation from the Class, including Bob Davis and wife, Jim Driscoll, Henry Grush, Frank Guptill, Will Hedge, Frank Hersey, Gene Hultman, Gene Laws, Paul Litchfield, C. E. Locke, Myron Pierce, Elmer Robinson, John Rockwell, Charlie Tucker and wife, Lloyd Wayne, and Con Young.

Your Secretaries have done some traveling during the summer. Rockwell had very good luck on a fishing trip in Maine at the first of June. He and Mrs. Rockwell paid a visit to the Charlie Tuckers in North Andover during the strawberry season in June and had a real feast. They also reported that the Tuckers were in fine form. He and Mrs. Rockwell made the annual trip to Harriman, Tenn., in August to visit the Rockwell family there, and at the end of September were off to Ontario to visit relatives. During the summer John has had his weekly Thursday afternoon golf with Fred Damon. At the time these notes are being written, Fred is in New Brunswick hunting moose. — Your Secretary had two summer trips, one a rather rapid automobile journey to Ontario, Michigan, Ohio, and Virginia, taking in a number of mines and ore-dressing plants en route, and the second, a flying trip to Nevada, Utah, and Colorado to see some of the western mills and also to attend the meeting of the American Institute of Mining and Metallurgical Engineers in Salt Lake City and the meeting of the American Mining Congress in Colorado Springs. The only '96 man he met was

L. T. Cannon in Salt Lake City, who reported that he was feeling fine and doing a good business as an architect. He certainly looked well. Among his recent jobs was the designing of the new United States Bureau of Mines experiment station on the grounds of the University of Utah in Salt Lake City. This is a three-story office building, 40 by 133 feet, which was dedicated during the summer.

A card from Bakenhus came at the end of August from Tim Pond, Maine, where he was on a vacation. He reported that it was God's country in the summertime anyway and good for fly casting and rowing, of which the latter was more in his line. — Classmates who read the papers may have noticed, about the beginning of September, the appearance of the name of Walter Stearns along with that of the General Electric Company and other individuals who were claimed by Washington to have acted concertedly in restraint of trade by misuse of certain patent privileges. No one can possibly doubt Walter's loyalty and his desire to cooperate with and support the government in every way. He would be the last man to commit any offense. We all believe that the outcome will show Walter to be absolutely in the right. — Volume three, number seven, of *Education Foundations*, published by W. Harrison Thomas and his wife of St. Christopher School in Westfield, N.J., has been received. In addition to news of the school, it contains some very interesting comments on present-day conditions, such as one might expect to be written by Billy Thomas. — Communications from Lloyd Wayne state that he had a fine trip home after being in Cambridge for Alumni Day. He made various stops en route, visiting old friends. — Henry Waterman has written a note expressing his feeling of sorrow over the passing of Bert Thompson. He says that Bert was every inch a gentleman, always bright and cheerful, always friendly and helpful, capable, reliable, and worthy. This is typical of a number of comments received by the Secretary, which signify the place that Bert held in the hearts of his many friends. They have felt the urge to testify spontaneously to his fine qualities.

The Myron Fullers started off again in June on a year's trip to the West and Hawaii, going by auto to the copper country of Michigan, where Myron did his first geological work, thence to British Columbia, Washington, Oregon, and California. They planned to take their car on the steamer to Honolulu, and thus have it for use on the island. Their hopes were to secure an apartment there and spend the winter, but Myron guaranteed to be back in time for our reunion in Osterville next June. — Paul Johnson '98, who made a trip to Boston last spring, made it a point to call on Fred Ashley upon his return to California. Ashley is located in the Chamber of Commerce Building in Los Angeles, in the firm of Austin and Ashley, architects. Paul found Fred well and busy, although looking a little bit older than the last time he

saw him several years ago. Fred's firm has designed a great many of the prominent buildings and residences around Los Angeles and had been the architects in 1917 for Paul's house, which he considers to be one of the best built in southern California. Fred told Paul that Winthrop Chenery, who, since his retirement, has been living in Los Angeles, is in poor health with heart trouble and confined to a wheel chair.

Lou Marble in Cleveland writes that he has improved in health and feels that this improvement was in part the result of the longer days and the chance to get out in the sun. He spent much of the time out of doors during the summer, monkeying around the flower beds and absorbing all the fresh air and sunshine possible. He found this life preferable to navigating around the hospital in a wheel chair. His son Frank, who was graduated *cum laude* from the Case School of Applied Science in Cleveland, has gone to Harvard to carry on research work with Dr. Weske. — John Tilley announces that he has moved and that from now on the latchstring will be out at Apartment 4B, 40-04 Bowne Street, Flushing, Long Island, N.Y. His business address remains at Vermilya-Brown Company, Inc., 100 East 42d Street, New York City. — Cards received from Joe Stickney and Mrs. Stickney announce the marriage of their daughter Elinor to Lorenz O. Schmidt on June 5 in Indianapolis. The couple were to be at home after July 1 at 434 Barrie Avenue in Chicago. — Bradley Stoughton, dean of the college of engineering, Lehigh University, has been nominated for vice-president of the American Society for Metals. Nomination is tantamount to election.

The *Goodyear Wingfoot Clan*, which is the house organ of the Goodyear Company, came out on July 15 as a Litchfield fortieth anniversary edition. The front page carried a very fine likeness of Paul as he looks today, and the following pages contained a story of the building of the company, bits from Paul's industrial philosophy, pictures of various highlights in his industrial career, and a chronological story of his accomplishments from the time he joined Goodyear on July 15, 1900, down to July 15, 1940. This chronology is most illuminating, but unfortunately space limitations prevent its inclusion in these notes. On September 1 Paul's resignation as president of the Goodyear Tire and Rubber Company became effective, and he henceforth becomes chairman of the board, where he will continue to be the senior active executive and primarily responsible for policy. He is succeeded as president by E. J. Thomas, who will be concerned with the execution of policy, working with the chairman jointly in the selection and direction of personnel. — A new candidate for the '96 class scholarship has appeared in the person of Aldrich Northup, at present a second-year student in the Pensacola High School. He plans to enter M.I.T. in September, 1943. A photograph indicates that he is a very attractive lad.

It is with much regret that we announce the death of Ariel Dean Savage on February 21. Miss Savage was with us in our senior year as a special student in paleozoology. She was born in Stoneham, Mass., July 26, 1865, the daughter of William H. and Julia Adelaide Corliss Savage, and was formerly for many years teacher of elementary science in the Boston schools. She maintained a residence for a long time at 1557 Blue Hill Avenue in Mattapan, with her summer home in North Danville, N.H. — It is not too early to begin to think about our forty-fifth anniversary, which will be celebrated at East Bay Lodge in Osterville, Mass., from Thursday, June 5, 1941, through Sunday, June 8. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1897

Walter B. Russell, II, director emeritus of the Franklin Union of Boston, died on July 13. At the time of his death he was president of the Jamaica Plain Dispensary and chairman of the advisory board of the Hyde Park co-operative industrial course. He was born in 1874 and was descended from Mayflower ancestry. From 1897 to 1900 he was an instructor at Technology, and from 1901 to 1906 taught at the Pratt Institute at Brooklyn. From 1906 until 1908 he was assistant superintendent of apprentices for the New York Central lines. In 1908 he came to the Franklin Union. During the World War he was district educational director of the civilian war department committee on education and special training.

He was a member of the American Society of Mechanical Engineers, the Society for the Promotion of Engineering Education, the American Railway Engineering Association, the New England Railroad Club, and the Central Club of Jamaica Plain. He leaves a widow, one son, two daughters, a brother, and three grandsons. John P. Ilsley and Charles W. Bradlee represented the Class at the funeral exercises.

Since then Secretary Bradlee, too, has died. Ilsley wrote the following about him: "It was with profound sorrow that the members of the Class learned of the sudden death of our classmate, Charles Walter Bradlee, at Portland, Maine, on September 3. He had been in Portland to attend to his real estate interests in that city. Since 1912 Charles had been chairman of our class committee and acting class secretary and had been largely instrumental in bringing the various members of the Class into the close relations that have meant so much to all of us. He was also class representative on the Alumni Council.

"He was born at 113 Beacon Street, Boston, on February 8, 1875. He attended Chauncy Hall School, from which he was graduated in 1893. Entering Technology as a freshman in the fall of '93, he later chose Course IX General Studies, as it was then known. After graduation he went into the heating and ventilating

business, later forming Bradlee and Chatman Company, which was active until about fifteen years ago. Since that time, Charles was principally interested in real estate, with an office at 30 Kilby Street, Boston.

"He married Agnes Josephine Moller on June 17, 1923, and since that time made his home in Kendal Green, Mass. He is survived by his widow, three sisters, and two brothers. His loyalty and enthusiasm for the welfare of the Class and Technology affairs in general were evidenced by the many years he spent in promoting their mutual interests."

Edwin P. Bliss, I, died on July 27 at the Massachusetts General Hospital following an operation. Surviving members of his family are his wife, one son, and two daughters. Mr. Bliss lived in Malden and at the time of his death was president of the Methodist Laymen's Association of New England. In the past he had served as councilman and alderman of his home city. His activities were many; he was trustee of the Malden Savings Bank, trustee of the Malden Hospital, former secretary of the New England Association of Purchasing Agents, member of the American Society of Civil Engineers, and a member of the national and Boston chambers of commerce. In the professional line Mr. Bliss was a construction engineer, and supervised the construction of the Commonwealth Pier in South Boston as well as of many other structures in Boston. Some years ago he retired from active business. Burial was at Hampton Falls, N.H. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

1899

The Class may well be proud of the contribution one of its members has made to the national defense program. William S. Newell, Stark to his classmates and Pete to his present associates, had the vision to build "ships from shoestrings," and in the process not only helped himself, his friends, his country, but kept Bath, Maine, from lying down and dying. In 1902 Pete went with the old Bath Iron Works, a company that had been building ships since Colonial days. He worked up through the years to be works manager, a position he was holding in 1925 when the old Bath Iron Works finally closed its doors, forced to do so by the economic situation that followed the action of the Washington Disarmament Conference which scuttled the shipbuilding program of the United States.

Newell didn't give up without a fight, but he could not keep a shipyard going on a yacht or two and a couple of barges. So one sorry day the doors closed, and eventually a New York firm bought the Bath Iron Works for \$200,000. The property had been worth two million. Wreckers made short shift of the expensive equipment, which was shipped elsewhere, and the proud old factory was debased to making paper pie plates. Finally even the paper plate company folded up and the doors closed for good, throwing more men out of work.

Newell had gone to New York and had become the general manager of the New York Shipbuilding Company at a good salary. But the old iron works kept calling him. After much maneuvering he interested a naval architect and a Bath businessman in the possibility of reopening the old yard, and in October of 1927 the Bath Iron Works Corporation was born. Orders began trickling in: a 240-foot twin-screw yacht in 1928; then a tow boat; and then some fishing trawlers. The business wasn't much, measured by that of the old Bath Iron Works, Ltd., but the workmen began coming back, and business picked up. Then came the depression. Newell, however, would not let his shipyard die. If private interests would not build ships, or scows, or yachts, or barges, then the government might be interested because it was just starting to build fighting ships in a small way. He went to Washington and departed with the contract to build the destroyer *Dewey*. It is reported that the yard made little if any money either on that contract or on succeeding ones — it may have lost money — but the skilled staff was held on the pay roll. Slowly the government business grew, and in twelve years the Bath Iron Works Corporation has built sixty-six ships — most of them for the United States Government. Today Bath ships rate high with Uncle Sam. Bath, Maine, lives on, and expects to as long as there are men like Newell. — On June 15 Bowdoin College awarded W. S. Newell the degree of master of science.

George E. Lynch of Los Angeles, consultant on dust and fume control, was in New York City in August in connection with professional work in the Southwest. He did not stop in Washington. — Charles A. Smith, superintendent of roadway, Georgia Power Company, writes of the marriage of Lawrie H. Turner of Atlanta to Mrs. Violet T. Illges, a charming widow of that city, on September 3. Lawrie is now taking a course in pharmacy at the Southern College of Pharmacy. Smith had expected to be in Washington on September 20, and I waited for his call, but it failed to materialize. He was expecting to pass through to attend the American Transit Association convention at White Sulphur Springs, W. Va.

I am sorry to have to report the death of Amasa A. Holden on May 31 at Hillsboro, N.H. Holden had not been well and had spent last winter in Florida in the hopes of being benefited. We all recall his ability as a mathematician and his devotion to educational work. He taught in Maine, Tennessee, Massachusetts, and Pennsylvania before he went to Woonsocket, R.I., as head of the mathematics department. He later became principal of a school there. His daughter received the degree of M.S. in geology at Technology in 1931, and they are the only father and daughter to hold Tech degrees. This was a matter of great pleasure to Holden. — W. MALCOLM CORSE, *Secretary*, 1901 Wyoming Avenue, Northwest, Washington, D.C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

1900

First on the scene of the activities of our fortieth reunion at East Bay Lodge, Osterville, Mass., last June were Charlie and Mrs. Smith on Thursday, which day they spent in a trip to Martha's Vineyard. Friday marked the entry of the vanguard: Bob Blair, C. C. Brown and son, Mr. and Mrs. Louis Crowell, Joe Draper, Mr. and Mrs. Cyrus Hapgood, Mr. and Mrs. Walter Kattelle, Mr. and Mrs. Paul Price, Mr. and Mrs. George Russell, Mr. and Mrs. Herbert Stearns, Mr. and Mrs. Richard Westcoat, with their daughter and son-in-law, Mr. and Mrs. Breymier, Percy Ziegler, Mr. and Mrs. Frederic Everett, the Secretary and Mrs. Cotting, and Henry Jouett. A great mixing all the afternoon and a special one just before dinner offered by Joe Draper and Louis Crowell put everyone in a jovial mood, and during the dinner the "Stein Song" was heard from many tables. In the evening we had a social gathering and general discussions, enlivened by solos from Draper and a very interesting description of her life abroad by Westcoat's daughter.

Came the dawn, and shortly thereafter Allen appeared, having had an early start. William Hart came from Montreal on the morning train; Mr. and Mrs. John Brown, way from California; George Holbrook and Warren Sanders; Herbert Howe with his brother; Willard Jackson; Jim Patch and Chester Richardson with their wives; Mr. and Mrs. Arthur Walworth with Marcy Sperry and Harry Grant, picked up in Boston from Washington; Harry Thayer; Edward Bugbee; Mr. and Mrs. Frederick Ingalls; Theodore Tuck; Bob Leach bringing Jim Batcheller from Oregon; Charles Newhall, Sumner Manley, and Mr. and Mrs. Frederic Merrick. The golfers had their time, but no scores were reported. Draper, Crowell, Ziegler, Blair, Howe, Russell, Price, and Charlie Smith played, but the less said the better. The afternoon saw many round-table conferences among the captains of industry and also gatherings on the lawns, where worth-while experiences and opinions were exchanged. Mr. and Mrs. Merrick took several parties to Landfall, their beautiful house on Wianno Beach, a short distance from the hotel. Others took motor trips around the Cape. A cocktail hour engineered by the reliable pair, Joe and Louis, was a surprise as to ingredients and well advertised the output of the cranberry king. After an excellent lobster dinner we all gathered before the fireplace, and Percy Ziegler and Bob Blair took charge of the festivities. They called on Mrs. Russell, and we were highly entertained with a few well-rendered songs. Then, much to the amusement of the multitude, Jim Patch ran off his reels of moving pictures taken at former reunions. Songs by Draper followed, and short stories of Technology days by Jackson, Price, Ziegler, Blair, Sanders, and Grant. Allen told us all about the statistics of the Class, and Mrs. Breymier gave us some more of her interesting experiences while abroad. Sperry followed with some of the happenings in Puerto Rico, and

Charlie Smith, not to be outdone, told some stories of the railroads. Although the lights went out during George Russell's talk about the coast guard, we hardly noticed the darkness.

Sunday was spent with a little golf and many more conferences, during which Patch was busy with his camera shots for the next reel. Families were well represented by another generation to whom we look for the furtherance of our ideals. Among those seen were Jackson's children, Everett's daughter and husband, Westcoat's daughter and husband, C. C. Brown's son, Crowell's two daughters, and Duncan and Loraine Cotting. Just before dinner Fitch arrived.

At the luncheon on the lawn on Alumni Day in Cambridge were Mr. and Mrs. Merrick with their daughter, James Batcheller, C. C. Brown, Bugbee, Jackson, Bob Leach, Russell, Mr. and Mrs. Smith, Westcoat, Mortimer Silverman, Ziegler, Newitt Neall, George Cutting, Charles Comey, and the Secretary and Mrs. Cotting. This was a very pleasant renewal of old days in new places. From Cambridge we moved to the Statler for the banquet described elsewhere. At the tables were William Pickersgill, Silverman, Suter, Comey, C. C. Brown, Bugbee, Jackson, Leach, Batcheller, Russell, Ziegler, Draper, Smith, Westcoat, and the Secretary. All in all about forty-three members, eighteen wives, and thirteen children and guests were accounted for over the period. Seventy-five as a total is not too bad for a forty-year class. We heard from thirty-two by mail, regretting that they could not come: Atwood, who has illness in the family; Bacon, who is still with Du Pont; Briggs, in Pittsburgh; Brock; Cayvan, making better crackers than ever; Brigham, in the hospital; Clausen, in Cleveland; Constantine, International News, Mexico; Davis; DeWolf; Ellis; Gibbs; Graff; Hall; Hughes; Jennings; S. W. Jones; Lawley; Leary; George Leach; Lindsley; McCrudden; Maxfield; Morris; Ike Osgood, slowly recovering from illness; Paul; Rapp; Reimer, laid up with arthritis; Standish; True; and Wickes. The success of our outing is due to the untiring efforts of the boys in charge. What would we have done without Ziegler, who so well routed the travelers, or Crowell, who took care of the local problems, or Joe Draper, who did so much toward the entertainment of all? They have the satisfaction of knowing that all had a good time and were glad they came.

George Leach writes: "On the chance that you did not see it in a recent issue of the *Boston News Bureau*, I am sending the enclosed clipping. I saw this gentleman in action in a railroad hearing in Brockton some months ago, and he made a fine showing before people who were unfriendly to what his railroad was doing, though perhaps friendly enough to him." The clipping follows: "Charles E. Smith, vice-president of the New Haven Railroad, is one railroad official who rates high with the Massachusetts Public Utilities Commission. He is a frequent visitor to the State House in connection

with affairs of his road. Tuesday he made an excellent presentation of the reasons why the Commission should approve the road's petition for abandonment of passenger service at certain stations in the Metropolitan Boston Area. Although officially designated as vice-president in charge of purchasing, Mr. Smith is best known in railroad circles as an engineer. A graduate of M.I.T., he has done engineering work for railroads and others. Prior to coming to the New Haven in 1925 he was in the employ of the Missouri Pacific as consulting engineer with headquarters in St. Louis."

Part of a letter received from Fred Witherell, XI, follows: "I was involved in the bank failures and the Willys-Overland failure in 1931-1932 and lost everything. I later had a case of encephalomyelitis, or sleeping sickness, and was laid up for some time. During the last war I was major in ordnance, United States Army. During the 1937 Ohio River flood, I was sanitary engineer for the W.P.A. and the Ohio board of health in the Cincinnati district. I contracted heart trouble and have been here for two years in the hospital at Dayton, Ohio. I hope by next year to get back to work as a sanitary engineer." — The following announcement appeared in a recent issue of the *Boston Herald*: "Mr. and Mrs. Richard Westcoat of Taunton, announce the engagement of their daughter, Miss Carolyn Westcoat, to Mr. Brenton Bullock, son of Mr. and Mrs. George G. Bullock of Waban and Little Compton, Rhode Island. Miss Westcoat attended House in the Pines and was graduated from Pembroke College in 1938. Mr. Bullock was graduated from Brown University in 1938 having spent his junior year at the Sorbonne in Paris."

Getting lost on the roads of northeastern Massachusetts has its advantages, in the opinion of the Secretary and Mrs. Cotting, when late in June we were discovered map reading, on North Andover Common by none other than Ike and Mrs. Osgood, who escorted us across the common to their home and royally entertained us. Ike is slowly recovering from a long period of illness and hopes to take up his activities again shortly. — In the July issue of *The Review*, camera record of Alumni Day, page 379, picture ten, of Alumni President Worcester '97, did anyone recognize in the background the half-starved individual searching for a third helping? Well, look again. — C. BURTON COTTING, Secretary, 111 Devonshire Street, Boston, Mass.

1901

Because of rush work which came in unexpectedly, these notes for November will be brief, comprising only notices of a few changes of address received since the new Alumni Register was released the latter part of May, and the regretful recording of two deaths; namely, that of Carlton R. Rose on March 7 and that of Frank B. Walker on June 3.

Frank Walker studied at the University of Minnesota before coming to M.I.T. to take up a special course in mining

1901 Continued

engineering. Considerably older than his classmates, he was at various times occupied on railroadwork and on large construction jobs as a civil engineer, and later as a bridge engineer for the Bay State Street Railway. During the World War he was engaged in the construction of the Army Supply Base in Boston. In 1919 he became superintendent of ways and structures for the Eastern Massachusetts Street Railway, retiring as chief engineer in 1937. Since then he served as consulting engineer for the company. Walker had only very recently been elected president of the Boston Society of Civil Engineers and was also a member of the American Society of Civil Engineers, the New England Transit Club, the Boston City Club, and was a trustee of the Winthrop Community Hospital. His home was at Winthrop and he served there as a town meeting member and as a member of a special committee in charge of school-house construction.

Carlton Rose, notice of whose death was sent to the Alumni Association by his wife, was living at Berkeley, Calif., when he died, and we are sorry to state that there is no other information available. We shall, therefore, be appreciative of information which any of our classmates can furnish about this member of our class.

The changes of address are as follows: Edward P. Fleming, III, 4057 Leward Avenue, Los Angeles, Calif.; Robert M. Derby, I, Brookside Farms, Williamstown, Mass.; Joseph P. Catlin, VI, 501 Fifth Avenue, New York, N.Y.; Frank D. Rash, III, 55 Hill Road, "Castlewood," Louisville, Ky.; A. John Eveland, III, Box 2367, Reno, Nev. Regarding Eveland, the Alumni Association stated that he has established permanent headquarters in Reno for the supervision of mining work in that vicinity and to practice as a mining consultant. — ROGER W. WIGHT, *Secretary*, The Travelers Fire Insurance Company, Chapman Building, Portland, Maine. WILLARD W. DOW, C.P.A., *Assistant Secretary*, 20 Beacon Street, Boston, Mass.

1902

Our Class had an excellent turnout at the Alumni Day events. At the luncheon in Du Pont Court, '02 had a table filled to standing room only with Ned Baker, Bassett and Mrs. Bassett, Bosworth, Hunter and his daughter Alice, Philbrick, Sherman, Bob and Mrs. Williams, Jason Mixer, and Moore, all of whom showed up later for the banquet in the evening. Bosworth had come East with Mrs. Bosworth to attend the graduation of their daughter at Sweet Briar College in Virginia. Patch had expected to come, but was marooned in Columbus, Ohio. He had talked over the phone with Sisson, who is with the Baldwin Piano Company, and hoped to see him.

The Alumni Office gives the following new addresses: Hudson, 324 Union Street, Bangor, Maine; and Kern, 220 High Street, Macon, Ga., to which he has returned after a few years in Washington, D.C. — Joe Philbrick has joined the rank

of grandfathers — George Edward Philbrick, son of J. Edward Philbrick '32, arrived in June. Speaking of grandfathers, Carlton B. Allen of New Rochelle writes that twin grandchildren, Jaquellin and James Young, were born on January 1, 1939.

The class has lost one of its members by the death, on July 23, of Herbert E. Raymond of St. Albans, Vt. Raymond had lived there since 1912, when he entered the employ of the Missisquoi Pulp and Paper Company, of which he became president in 1924. He took an active interest in civic affairs, was city commissioner for two years, and president of the St. Albans Hospital for many years. Raymond is survived by his wife, two sons, and two daughters. — BURTON G. PHILBRICK, *Secretary*, 246 Stuart Street, Boston, Mass.

1903

Eight of the Class had a good dinner and a pleasant evening together at the Graduate House the Saturday before Alumni Day. On that day Aldrich, Bradshaw, Myron Clark, Cushman, Denham, F. A. Eustis, Gould, Howard, Jackson, W. R. MacCornack, Regestein, and Sears attended part, or all, of the reunion celebration. We heard from others who sent regrets. Bill Whitcomb was at Ottawa, where he spoke before a meeting of textile associations; Glenn had one daughter being graduated in New York and another getting a master's degree in New Orleans; Bradshaw had a son being graduated at M.I.T. Others were probably similarly prevented from coming back to Tech. We hope, however, that the Class will bear in mind that our fortieth anniversary will be on us all too soon. Don't put off your trip to Boston until the fiftieth, because you may not be able to make it.

Hood, who died in 1934, was awarded posthumously the medal of honor of the New York chapter of the American Institute of Architects in May. It was presented by Frederick G. Frost, President of the chapter, to Hood's son. Charles D. Maginnis, past President of the American Institute of Architects, paid a tribute to Hood, saying among other things: "He was an inspiration to students, and the record of his important buildings demonstrates his great breadth of vision and willingness to change. His overflowing brain did not stop with buildings, for his imaginative projects of all sorts and kinds evidenced vision of the architecture of the future, which marked him as an outstanding genius of his period."

From a letter of Charles Schweinfurth of Wellesley Farms, we have further information about Mary Snow, who died in April: "Born in Auburn, N.Y., Miss Snow later lived with her brother, an eminent surgeon of Rochester. In 1904, she became housemother at Pomeroy Hall, Wellesley College, where she displayed resourcefulness, tact, and good temper. In 1918, on the opening of Washington House, Wellesley, she took charge there. In 1922, she retired from Wellesley College and founded and conducted the

Blue Dragon tearoom in Wellesley. During this time Miss Snow endeared herself to hundreds of Wellesley students, alumnae, faculty, and visitors to the College. From the closing of the tearoom in 1935, she lived at the Chapin Home, Jamaica, Long Island, N.Y., whence she made frequent visits to friends and relatives in Wellesley and environs, and in New York, besides occasional trips to the Gaspé." — J. Howard Pew's son, George Thompson, married Constance Delk Clarke in Philadelphia last May. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 441 Stuart Street, Boston, Mass.

1905

Since the thirty-fifth reunion, held at Boxwood Manor, Old Lyme, Conn., on May 31, June 1 and 2, has been fully covered by a separate newsheet sent to every known member of the Class, the story here would be superfluous. Yet to others who read, we may well brag about the greatest turnout ever for a thirty-five-year reunion. Fifty-two men, more than we had at Oyster Harbors in 1930 or at Old Lyme in 1935, turned out, accompanied by twelve wives and one daughter. Fifteen states were represented; Chicago sent five; while Joe Daniels from Seattle won the long-distance banner. (Did you get it, Joe?) The final act of the Class in dully assembled meeting was to vote to continue the yearly get-togethers at the same place and make the fortieth in 1945 even bigger and better.

One who was with us at Old Lyme five years ago, Walter Bent, now in England, wanted to return this year; but listen: "... Shall I laugh or cry? Old Lyme! A fat chance for me to be there. Here I am with my wonderful wife and one son in England. The French have had to say finis. Tomorrow perhaps we here in England will see and get what the Poles, the Dutch, and all the rest have had to take. ... The paper hanger and his friend the Italian have not yet had their last word. I have the utmost confidence that the British Empire will continue to exist. I also believe that my own country, the United States, will be the main prop which will keep all that is worth while going. I hope that the Class will have a cheerful and good reunion." — We missed you, Walter, and hope you will be back another year with a story of the victory.

Fellows who knew best our late classmate, Gorham Crosby, will be interested to know that his son, Edward Danforth Crosby, was graduated from M.I.T. last June. We learned of this too late to have him as our guest at the Alumni Dinner, but some of his classmates joined us for a bit and told us what a swell guy Gorham's son is. His path was not too rosy, but he hit the line with splendid spirit and went over for a touchdown. Since the reunion, Harry Wentworth has been elected president of the Auburndale Cooperative Bank, "one of the soundest banks in the state," says Harry. Anyone need a loan? And while on financial matters, see Carroll C. Curtis, now located

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with J. Arthur Warner and Company, Shawmut Bank Building, if you wish to put all that loose money into something good in stocks or bonds. No charge, Carroll? — Andy Fisher says that Prince Crowell missed the reunion because of the need for yachting practice. Prince reached the goal of his ambitions in July, however, when he won the Cape Cod championship for fifteen footers. Newspaper accounts give credit to his son and daughter, Dr. P. S. and Olive, claiming that they furnished the seamanship, and Grandpa Prince, the ballast. Oh yes, Prince has joined the grandfather's club. (Details, please.)

Richard W. Senger, III, couldn't attend the reunion as he was boning for a new job. Since, he has been promoted to special personnel organization work connected with all western plants of the American Smelting and Refining Company, with offices in the McCornick Building, Salt Lake City, Utah. Congratulations, Dick. — Ernest N. Briggs, XIII, passed away at his home in Taunton, Mass. Ernie had been a state highway engineer, located at the Boston office, since 1939 and was chief engineer of the right-of-way division. He was unmarried and leaves no immediate family. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 75 State Street, Boston, Mass.

1907

In the Boston *Traveler* of June 4 appeared an item telling of the death of our classmate, Lucius Felt Hallett, in Chicago on June 3. I wrote a letter of sympathy to his widow and received from John F. Hallett, one of Lucius' sons, a letter from which I quote in part: "Your letter of June 7 to Dad's second wife has somehow gotten around to me for a reply, inasmuch as I seem to be the one . . . with records on Dad . . . in my files. Looking back on the last fifteen years of Dad's life . . . all of us . . . feel that he must have already had the diabetic and cancerous condition that finally rang down the closing curtain. It sapped his energy and may in part account for the lack of contact and friendship he might otherwise have had with his Class and associates at M.I.T. . . ." Lucius married Genevieve Folsom Pfeiffer in 1908 and had seven children. He married Marie Frances Hawver in 1927, but they had no children. His sons and daughters are all living, ranging in age from thirty-one to sixteen: Lucius F., Jr., Princeton '31, married, living in Syossett, Long Island, N.Y.; John F., Yale '34, married, Old Mill Road, Greenwich, Conn.; Robert C., Princeton '35, married, Jackson Heights, Long Island; James B., Harvard '37, and Moses D., Harvard '40, both single, living in Boston; Genevieve Katherine and Oliver S., both in Chicago.

After receiving his S.B. degree from the Institute in 1908, Lucius was assistant to the trustee of the estate of George W. Clayton in Denver, Colo., until 1912, after which he was with C. H. Tenney and Co., Boston, in statistical work and

power plant remodeling for a year. He returned to Denver in 1913 and was there until 1926, having his own business in real estate, farm loans, and mining operations. During this period he was treasurer of St. Luke's Hospital in Denver for twelve years, president of the Denver Art Museum for four years, a director of the Clayton School for Boys and the Colorado Museum of Natural History, and from 1917 to 1926 was president of the Denver Board of Education, in which capacity he rendered such valuable service, reorganizing and improving the entire plant facilities and curriculum of the public school system, that the Denver Chamber of Commerce adopted a set of resolutions in appreciation. From 1929 to 1930 he was illuminating engineer with Southern Sierra Power Company, Riverside, Calif., whence he moved to Chicago to become legislative personnel secretary for the American Legislative Association. From 1934 until his death he was field secretary, engaged in research work for the American Municipal Association in Chicago.

Only eight '07 men attended the festivities of Alumni Day on June 3: Dick Woodbridge from Wilmington, Del., whose son, Richard G. Woodbridge, 3d, received a master's degree in Chemical Engineering at the Institute this year, Lawrie Allen, Ed Moreland, and the Secretary were on hand at the luncheon at Cambridge; and these four, together with Peabo Peabody, Don Robbins, Bill Woodward, and Ralph Hudson, attended the Hotel Statler banquet in the evening. Harry Moody and Oscar Starkweather were in the hotel lobby for a short time preceding the dinner. On Commencement Day '07 was prominently represented, as usual, with Alexander Macomber gracefully performing the duties of marshal; Ralph Hudson, as chairman of the faculty Committee on Commencement, efficiently caring for the multitude of details; and Ed Moreland, by virtue of his position as dean of engineering, having important activities.

Bill Woodward told me that he was in Ottawa, Canada, last May and called on our classmate, Clarence D. Howe, who has held the post of minister of transport for several years under the Mackenzie King government and who last spring was made minister of munitions and supplies in the speed-up of Canada's war effort. The Boston *Globe* of July 28 contained a three-column article, with pictures, tracing Clarence's life from the time he rowed on the Waltham, Mass., high school crew in 1901, through his undergraduate days at Technology, his year as assistant in Civil Engineering at the Institute, his five years as professor of civil engineering at Dalhousie University, Halifax, Nova Scotia, his three years as chief engineer for the Board of Grain Commissioners for Canada, and the establishment of his own firm, C. D. Howe and Company in Port Arthur, Canada, in 1916. He specialized in the design of grain elevators but also built pulp mills, coal docks, and other heavy structures. In 1932 a London banking house sent him to the Argentine to plan erection of grain elevators there.

Shortly afterward he entered political life, largely through the influence of the present prime minister, King, running for Parliament at Port Arthur. In 1935 he became minister of railways and canals and minister of marine. The two ministries were later consolidated into a single Department of Transport. It is evident that in his present position, directing the construction of munition plants and their production, Clarence is a vital personality in the war program of the British Empire. He has two sons and three daughters, the oldest eighteen and the youngest eleven.

A clipping from the Worcester, Mass., daily *Telegram* of June 21, kindly sent to me by Dennie '11, shows a picture of Charlie Allen. Charlie had just been re-elected president of the Worcester area Boy Scout Council. — Last July, Lawrie Allen moved from Waban, Mass., where he had lived for many years, to 30 Hawthorne Avenue, Auburndale, Mass. Both of these sections are parts of the city of Newton. — An item in the Boston *Herald*, June 1, tells of William B. Coffin, commodore of the Duxbury (Mass.) Yacht Club greeting members on May 30, the opening day of the season. — Ralph Crosby's new home address is 707 South Park Avenue, Springfield, Ill. — Parker Dodge called my home on the telephone from Boston on the evening of August 7. I was not there at the time, but he talked with Mrs. Nichols and said that his son Charles was to enter the Institute as a freshman this fall. — Tom Gould now has his own firm, Gardner S. Gould, Engineers, at 89 Broad Street, Boston. — Carl Trauerman was re-elected president of the Mining Association of Montana at the annual convention at Helena on August 10. This will be his seventh consecutive year in that office. — Harold Wonson's younger daughter, Margaret, was graduated from Kendall Hall in Peterboro, N.H., last June, and his son, Harold, was graduated from Dartmouth. — Elizabeth MacGregor, daughter of Milton E. MacGregor of Needham, Mass., and Charles W. Crooker were married on September 14. In 1940 both were graduated from Bates College. They are living in New Haven, Conn., where they attend Yale Divinity School.

A letter received in early September from Everett R. Cowen enables me to record his doings since 1907. A graduate in Civil Engineering, he was successively in the chief engineer's office of the Pennsylvania Railroad System at Pittsburgh, estimator and engineer with Ferro Concrete Construction Company at Cincinnati, designing engineer with an architectural firm in Louisville, Ky., chief engineer and partner with a general contractor in Louisville, partner in Garst-Cowen Construction Company, and since 1935 engineer and estimator with Struck Construction Company, Inc., in Louisville, a firm handling large building construction, both public and private, mainly in the Middle West and South. Everett has three sons; the oldest, a graduate of Speed Scientific School of the University of Louisville, is married and has a daughter; the second is a graduate of the same

1907 Continued

university in an academic course; the third is fifteen years old. Cowen's home address is 1420 Goddard Avenue, Louisville, and his office is at 147 North Clay Street in the same city.

During the summer two messages came to me from classmates who had not been heard from for many years, one from Harold S. Duncan, III, and the other from Edwin C. Richardson, II. From 1907 to 1918 Duncan did general engineering work with the Old Dominion Company in Globe, Ariz., and from then until 1932 was chief mine engineer with the same company. After three years of miscellaneous jobs he became camp superintendent with the United States Department of Agriculture, Soil Conservation Service. In 1937 he was head timekeeper at the smelter of Phelps Dodge Corporation, Clifton, Ariz., and in 1939 returned to the Soil Conservation Service as assistant agricultural engineer, his present position. His business address is Box KK, Warren, Ariz.; home address, Post Office Box 1755 in Warren. Harold was married in 1908, and has one daughter, who married John L. Nylen and lives in Alhambra, Calif.

Richardson worked for three years in the production and engineering departments of the American Locomotive Company, two in shop system methods with Allis-Chalmers Company, and then from 1912 to 1917 was managing director of the St. Lawrence Welding Company, Ltd., in Montreal. The World War brought him into service from 1917 to 1919 as first lieutenant in the 146th Infantry, United States Army. From 1920 to 1925, he was assistant superintendent of the Burson Knitting Company (hosiery); 1926 to 1928, did plant system work with Gladding McBean Company (clay products); 1929 to 1940, was director of the Aeroconcrete Construction Company, Ltd., in Montreal; and 1933 to 1940, was chief engineer of Champlain Oil Products, Ltd., in Montreal, with office at 1501 Sun Life Building, Montreal. Edwin did not marry until 1933, and he has no children. His home address is 420 Mount Stephen Avenue, Westmount, Montreal, Canada. We quote from Ed's letter: "In looking back over the years since the old days when we were together in the drafting room, there seems little worthy of comment. . . . I have, however, been to a good many places, including Schenectady, Milwaukee, Montreal, France, Boston, Rockford (Illinois), San Francisco, and Los Angeles. I was with Ted Smith in Boston for a short time in 1919-1920, and saw a little of Parker Dodge eight or nine years ago. Frank Hamilton was in Milwaukee at the same time that I was, but aside from these three fellows, I do not recall meeting any of my classmates."

Since 1937 James G. Moore, IV, has been contracting engineer with the Aetna Iron and Steel Company at 2340 Market Street, Jacksonville, Fla. His work consists of the designing, estimating, pricing, and selling of structural steel for buildings, bridges, and so on. Since 1907 he has been with several different companies, chiefly in the steel business. His home

address is 325 Lenox Avenue, Daytona Beach, Fla. He has a son fourteen years old and an adopted son nineteen.

In the Liverpool, England, *Journal of Commerce* for June 22, we read: "The American President Lines announce that Mr. James Reed, president of the Association of San Francisco Distributors, has been elected a member of the board. Commenting on his appointment, Mr. Reed said that he had watched with great interest the rapid adjustment and advance of the American President Lines to national prominence, and he would take pride in being associated on the board of directors, with an organization whose trade routes carried the name of San Francisco around the world." The Boston papers of September 12 and 13 contained an announcement saying that "Reed has been elected president and chief executive officer of Cramp Shipbuilding Company, recently formed to succeed the William Cramp & Sons' Ship and Engine Building Company and to effect a reopening of the Cramp shipyards in Philadelphia for construction of naval vessels." Congratulations to our classmate (Course XIII-A) on his success and honors. (See The Review of last February for facts regarding Reed's career.)

The Review class notes of July, 1937, carried a story about Sidney D. Wells, stating that he was partner in Paulson and Wells, consulting chemical engineers and advisers to the pulp and paper industry. Having noticed in the 1940 M.I.T. "Register of Former Students" that Sidney is now research associate with the Institute of Paper Chemistry at Appleton, Wis., I wrote to him requesting news about himself and family. As a result I received in August a fine letter from which I quote: "I am no longer doing private consulting work except a limited amount which could not be discontinued when I joined the staff of the Institute of Paper Chemistry. My partnership with Mr. Paulson was somewhat informal and I retained the privilege of advising him outside of official time on the process which he invented for utilizing spent sulphite liquor from paper pulp manufacture. I also retained the privilege of advising the Mine and Smelter Supply Company of Denver, Colo., in connection with the application of the Marcy rod mill for the treatment of paper pulp."

"I am a research associate and divide my time among teaching, conducting investigations presented to us by the paper manufacturers which support the Institute, and giving technical counsel to these mills. The Institute of Paper Chemistry is a graduate school, affiliated with Lawrence College, which gives a four-year course in advanced science and technology applied to the manufacture of pulp and paper. About fifteen students complete the requirements each year for the degree of doctor of philosophy. The academic work makes up about half of our duties, and the rest of our time is devoted to research and counsel. About 90 per cent of the paper industry in Wisconsin make up our membership and 65 to 75 per cent of the industry in the United States.

"My oldest child, Sidney D., Jr., was married on August 3 to Miss Katherine Loomis of Bronxville, N.Y. He was graduated from the University of Wisconsin in 1939, where he met his bride who also was graduated the same year. Sidney, Jr., is now learning the flag and banner business with Annin and Company, 'Old Glory Corner,' Fifth Avenue and 16th Street, New York. Just now that business is booming. My daughter Hope was graduated in June from the University of Wisconsin and is now a leader in a Y.W.C.A. camp at Newaygo, Mich. Helen Elizabeth will be a senior at the University of Wisconsin and is interested in government. Also, she was elected to Mortar Board. Martha is a sophomore at the University of Wisconsin this year. By the time she is graduated my daughter Mary will be ready to start. Eleanor Jean is at home, and Benjamin, the youngest, is in grade school. I hope that he will be more interested in engineering and perhaps will go to M.I.T. If so, he should be graduated about 1954. If he should be so lucky as to win a fellowship at the Institute of Paper Chemistry, four more years of study will be required. Whether the old machine can keep going until then is an important question."

"I regret deeply that I have not been able to take part in any recent class reunions, but things seem to pile up in June so that it is impossible to get away. I have the desire, however, and may surprise you one of these years by showing up." — Sidney's home mailing address is Box 1, Combined Locks, Wis. — BRYANT NICHOLS, *Secretary*, 126 Charles Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

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B. Edwin Hutchinson's Chrysler Corporation broke ground in the middle of September for the \$20,000,000 army-tank plant to be built and operated for the government. After Chrysler has built and equipped the plant, the title is to be transferred to the government, which will reimburse the Chrysler Corporation for all cost. Chrysler will lease the plant during the contract period for one dollar a year, operate it and maintain it, and build tanks at a fixed price for each tank in accordance with army design. We understand there are now on order 1,000 twenty-five-ton tanks at a contract price of \$34,500,000. Doubtless many other of our classmates are mixed up one way or another on the government's defense program.

I recently had a letter from Paul Wiswall, in which he said: "I have had a call from Clifton C. Carter. I had heard that Carter had arrived at the retirement age and had left West Point. He dropped in to tell me that he was in New York to see his sons, both of whom are in the Army. One was at the moment stationed at the camp in Canton, N.Y., where a huge contingent of guardsmen had been in active training for about a month. The other had just sailed for the Canal

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Zone. Carter was his own superlative self. It has always seemed to me that he had the very job he was most truly fitted to hold. He has been for something like twenty-five years the dean of the corps at West Point. In many visits to the Point since I came to New York to live, I have come to feel that as thrilling a sight as I shall ever see is the corps on parade in that beautiful spot on the Hudson; I have always felt a bit envious of a man like Carter. He admitted that when he left, there was no ceremony or honor too good for the corps to give him. . . .

"I look back to that spring day about ten years ago when Carter asked those of the Class in and about New York to be his guests one Saturday afternoon. About thirty of us, including wives, children, nieces, and nephews, gathered in his stately brick house, just west of the monument, with a noble view of Storm King, Anthony's Nose, and the lordly Hudson. We filled the house. Mrs. Carter set out a lavish buffet lunch that was interrupted before the dessert course by peremptory commands from the Colonel himself that we move down to the parade grounds to see a ceremony that I have always felt Carter staged altogether for our own 1909 benefit. There were two girls in that party who will long remember that day, for George Palmer's Carmen and my niece Virginia Farrar (she is now Mrs. Dadson) both had *two* cadets to escort them to the feature of the afternoon, the annual lacrosse game between Army and Navy! . . . I think that that day will stick vividly in our memories for many years to come. Since Mrs. Carter has always lived on an army post, you can be sure she was the perfect hostess. Carter admitted he was sixty-four but . . . he has many good years before him. Both he and Mrs. Carter, who was with the Colonel, looked the pictures of good health and good nature. Their permanent address will be care of the Adjutant General's Office, Washington."

Among the United States refugees from Paris on the S.S. *Washington* were John Willard's daughter Virginia, now Mrs. Nathan H. Wentworth, and her daughter, Linda Lou. Judging from the following account by John, written on August 7, they must have had a terrifying experience: "Yes, those particular days in June were quite exciting for our immediate family. Late in May, Virginia and her husband left Paris for the little town of Hossegor, which is in southwestern France, a few miles north of Biarritz. Finally, as things became hotter and hotter, they decided to have Virginia and the baby take the *Washington*, which was sailing from Bordeaux on June 8. From Bordeaux the boat went to Lisbon and then to Galway before heading for New York. While off the coast of Portugal, the daughter had to get out in the lifeboat with the baby when the *Washington* was halted by a submarine. They arrived in New York, however, on June 21, the day that France capitulated. They are now finally getting straightened out and I think will be back somewhere near normal within the next few weeks.

It was, of course, a pretty severe strain on all of them. The husband is still in southwestern France, although he is able to carry on only a very meager amount of business. The last word we had from him indicated that he might try to return to Paris, but we really feel the hope of carrying on business from Paris will prove futile. He writes that conditions in the occupied areas of France appear to be superior to those in the unoccupied areas. All the people I have talked with who have returned from France seem unanimous in thinking that the downfall of the country was caused more by internal political treachery than by the overpowering weight of arms."

Bradley Dewey, Jr., was married in August to Jane Holcombe, daughter of Professor and Mrs. Arthur N. Holcombe of Cambridge. Brad, Jr., prepared for college at Milton Academy. Following his graduation from Harvard in 1937, he studied for the degree of doctor of science at M.I.T. His bride attended Connecticut College at New London and is a member of the Junior League, having made her debut in the season of 1936-1937. — At a lovely wedding in the Unitarian Church, Dedham, on September 21, Alberta, daughter of Carl and Hazel Gram, was married to Charles G. Macdonald of Beaver Falls, Pa. The four-o'clock ceremony, for which the bride wore her mother's wedding gown, was followed by a reception at "Baranca," the home of the bride's parents in Westwood. Art and Betty Shaw and Charlie and Rose Main had the pleasure of being present. Gloria Gram was her sister's maid of honor. Alberta attended the North Shore Country Day School and Dana Hall and spent two years traveling in Europe studying music. Macdonald is a graduate of Virginia Military Institute and Stevens Institute of Technology.

George and Marcia Wallis became grandparents last spring with the birth of Albert Winslow Dodge, Jr., to their older daughter, Elizabeth. — Chet Dawes has written me that his duties as vice-president of the American Institute of Electrical Engineers practically terminated with the national convention which was held at Swampscott the last week in June. Chet and his daughter Jane spent the greater part of the summer at their cottage at the Isle of Springs, Maine, where he was working on textbooks and patents as well as putting in an occasional day or two in his power boats. Chet very kindly sent me the following information: "James H. Critchett, Vice-President of the Electro Metallurgical Company and of the Union Carbide and Carbon Research Laboratories, Inc., New York, and past President of the American Electrochemical Society, has become a member of the division of chemistry and chemical technology of the National Research Council." — Arthur L. Shaw has been elected president of the Boston Society of Civil Engineers.

The following extremely interesting letter has come from Chet Pope, in response to Paul Wiswall's request that

he write something about his trips to South America: ". . . We had read so much about the opportunity for trade in the printing and lithographic inks in South America that we first went there last year on more or less of a scouting trip. The results were so encouraging that we decided to make a trip this year for business purposes, and we are more than pleased with the results. . . . Last year, before the war started, there was some interest shown in American products, but the cream of the trade went to Germany, England, and Italy. Since the war, however, these European markets have closed and there is a great deal more interest shown in American products."

"There are great opportunities for American business in Uruguay as well as in Brazil and Argentina. Many large American manufacturers, including General Motors, Ford, Westinghouse, and General Electric, have recognized these opportunities for some time and now have large manufacturing plants in these countries. I believe Singer Sewing Machine was one of the first American companies to build up a trade in South America. In our business we found that the German influence was predominant. Practically all the large printing and lithographic plants have German equipment throughout: presses, paper cutters, photographic equipment, and so on. The technical men in these plants are Germans who had been sent with the equipment and who liked the country so well that they remained there. We worked very hard on our Spanish and Portuguese before these trips but now have made up our minds that we will have to review our German in order to make proper contact with these printing and lithographic plants. One also sees quite a few Italians, but the English and Americans are not so numerous in Brazil, Argentina, and Uruguay — the countries we visited."

"South America offers many inducements to anyone who is travel minded. Excellent steamship companies make regular two-week trips to both the East and the West coasts. . . . We enjoyed Rio de Janeiro immensely. There is no harbor in the world to compare with this one for setting and beauty. . . . The city is very modern. The business section has large office buildings, many of which are better than we have in our larger cities. Some are skyscrapers, but they seem to lean toward the modernistic in style."

"There are several good hotels in Rio de Janeiro. . . . Gambling is a great diversion for Brazilians, and the casinos furnish plenty of facilities for loosening your pocketbook. We liked the Urca Casino, and without a doubt it is the best in Rio. We have nothing so gorgeous in this country. It has a large dining room and dance hall, where orchestras rotate on the stage in front of a large mirror. It was in this casino that we saw Carmen Miranda perform last year; and while she has made a wonderful hit here in New York, it does not compare with the enthusiasm with which she was received at the Urca Casino. The natives of Rio are

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great lovers of dancing. You will see the finest dancing in these casinos, and if you have the opportunity to be in Rio during the carnival, you will see the people dancing day and night on the streets. The rumba, the tango, and the conga have been very famous dances, but in the last two years they have taken second place to the samba. You may have given up your enthusiasm for dancing, but when you get into Rio and hear the music and see the people dancing, your old blood is stirred and you immediately start taking lessons from the Arthur Murray School.

"There are many wonderful excursions one can take around Rio. Most tourists go there for only a week or two, which is not enough time. The trips to Sugarloaf and to the top of Mount Corcovado, where there is an enormous concrete statue of Christ, are the first ones to take. A trip across the harbor to Niteroy is well worth a day's time. On that side are beautiful crescents of white sandy beaches, and one can drive to the end of the harbor, where the small fishing villages are extremely picturesque. A view of Rio and the mountains in the rear is beyond description. Petropolis, a summer resort for the well-to-do people in Rio, is high in the mountains and is reached by a wonderfully engineered automobile road.

"São Paulo is the largest industrial city that we saw in South America, and all tourists, especially those interested in industrial activity, should certainly spend a week there, where business and attention to work are the keynotes. The largest printing, lithographic, and other industrial plants are located here. In this city most tourists visit the snake farm, where serum is extracted from all types of poisonous reptiles. We were disappointed with the size of the snakes, which averaged about three feet. Every railroad station in Brazil has a box where farmers or settlers can bring their snakes and deposit them for delivery to this farm. One afternoon when we were there, we saw at least fifty boxes of snakes delivered. There were all kinds. A canary-colored rattler caused considerable commotion among the caretakers. No such light-yellow rattler had ever before been seen or heard of. There were also toads that squirt poison from their eyes.

"Brazil is rapidly building up a cotton industry. Coffee is, of course, its principal export, but during the past couple of years much of the crop has been destroyed. Many fine types of wood come from all parts of Brazil. We were very much interested in the use of parquet wood flooring in the office of one customer. We saw over eighty different kinds of Brazilian wood used in fancy blocks for flooring. The same man's office also was furnished in very modernistic style with every panel about two feet square made of different wood. The architecture of buildings, especially homes, is a hodgepodge of all types. Italian influence seems to be predominant. In the last two or three years, however, wealthy Brazilians are building homes that are extravagantly modernistic. Fancy

stone and polished marble are used extensively; heavy bronze and wrought-iron gratings of attractive design are used; there is extensive use of fancy tile in almost all homes, especially for flooring. Almost every home has the windows barred. The story goes in Brazil that the master of the house locks his wife in the home when he goes out for pleasure.

"Brazil has accomplished great results with its extensive park systems and boulevards. Tropical verdure and flowering trees have helped them considerably. The people are great coffee drinkers. Every business establishment we called on indulged in the drinking of coffee at two-hour intervals during the day. We were pleased to note that coffee bars were very numerous and seldom did we see any barrooms where hard liquor was served. Politics are active in Brazil, but we did not see any signs of political unrest. Everybody seemed to have work to do. The weather was very warm and humid in Rio, but in São Paulo, which is about 2,500 feet above sea level, it was very cool and comfortable. We were in Brazil both times during March and April, though they tell us that the best time of the year to be there is in October, which is their springtime, when most of their orchids and flowering plants are in full bloom.

"We spent some time in Montevideo, Uruguay, and it was quite a letdown after our experiences in Brazil. This capitol city is, however, very beautifully laid out. There are parks and attractive buildings along the beaches. Carrasco Beach is a famous summer resort for wealthy residents of Buenos Aires. . . . Practically all the new homes here have extravagantly styled construction with unlimited use of polished marble, onyx, stainless steel, bronze, and beautifully tiled roofs. Most of the homes have their own private swimming pools. . . . The legislative palace, built mostly of marble at an extravagant cost, is without doubt the handsomest building we have ever seen. Here you will find more than a hundred varieties of the most beautiful colored marble and onyx in the world today. Business is not taken seriously here, even in some of the larger plants. Time is taken out for lunch, bathing, and siestas.

"You will approach Buenos Aires on the muddiest river you have ever seen. How they ever named it Rio de la Plata, or River of Silver, when it is practically full of brown mud, is more than we can make out. Buenos Aires is very much like a European city. It resembles Paris, and some people say much of it looks like Rome, the architecture being mostly heavy Italian style. The city proper extends many miles inland from the river front. The population of Argentina is reputed to be around fourteen million, and at least ten million are located in this city. Commercial interests are very active, and here again you see German influence in printing and lithographic plants. The English have had a very strong hold on the trade in Argentina. American products, especially automobiles, farming equipment, radios, and so on, are pre-

ferred even though our trade relations are such that the Argentine Republic makes it very difficult to import American products. At the present time the government has eased up a little because the people are demanding American products now that they cannot obtain substitutes from nations that are at war.

"There is not much gay life in Buenos Aires. People pay more attention to what they eat. Meats and dairy products are exceptionally tasteful. Most of the meat used is freshly killed. All cold-storage meat is shipped abroad. For a peso, or less than twenty-five cents, you can buy a good porterhouse steak weighing three or four pounds. Argentina is a very unattractive country for tourists, although we enjoyed an automobile ride to Córdoba, located in the foothills of Central Argentina. This is a ride of about 500 or 600 miles over very flat, uninteresting pampas. It was interesting, however, to see the various estancias and many thousand heads of cattle. The climate of Buenos Aires in April is like our November, but there is never any snow or ice. Commercial activities would be the only attraction for us in Argentina." — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. *Assistant Secretaries*: PAUL M. WISWALL, MAURICE R. SCHARFF, New York; GEORGE E. WALLIS, Chicago.

1910

The thirtieth reunion proved to be the most enjoyable ever held. Arrangements had been made for the class dinner at the University Club; in fact, two dinners had been planned — one for members of the Class and one for the wives of those attending. Soon after six o'clock, classmates began to arrive and a double reception was held: one in the lobby and the other in the ladies' reception room where the wives met. There were present those who have attended every reunion and a few who were returning for the first time in thirty years. It was evident that the lapse of time had not so changed anyone but that he was soon recognized and called by his nickname.

After introductions to the ladies and the predinner cocktails, the ladies were ushered to their dining room, where they enjoyed dinner accompanied by musical entertainment. After dinner they were driven to Symphony Hall for a Pops Concert. About seven-thirty, forty-six members of the Class had congregated and were ready to eat. Over sixty classmates had expressed their intention of attending, but because of accidents and urgent business matters, fifteen of them were unable to be present. The committee had furnished musical entertainment. The entertainers had evidently been advised that this was a thirtieth reunion, for they played selections from *The Red Mill*, *The Spring Chicken*, and other numbers reminiscent of undergraduate days.

After dinner each man was called upon to give the highlights of his life since leaving the Institute. Dick Goodwin, who was senior class president and attending his first reunion, was followed

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by John M. Gray, Dan Gibbs, Erford M. Potter, Carl H. Lovejoy, George P. Lunt, Abbott Allen, George W. McRae, Dean Peabody, Jr., Clifford C. Hield, Stuart Sneddon, Lawrence B. Chapman, Gordon G. Holbrook, Charles E. Greene, Andrew L. Fabens, Guy N. Harcourt, George E. Miers, John B. Babcock, 3d, Otto R. Rietschlin, Arthur H. Curtis, Albert J. Beach, Allen Curtis, Earl W. Pillings, Floyd J. Pitcher, Carl J. Sittinger, Harold C. Manson, Luther Davis, Raymond W. Jacoby, William R. Waldo, Richard S. Bicknell, Dudley Clapp, Don V. Williamson, Allen A. Gould, Henry A. Hale, Lewis W. Waters, Walter W. Scofield, Jr., Dallas Brown, Jr., M. J. Turnbull, Leroy E. Briggs, Robert F. Burnett, William J. O'Hearn, Frederick W. Osborn, Orrin J. Crommett, James W. Dickinson, and Herbert S. Cleverdon.

The ladies had returned by the time the class dinner started to break up, so the husbands and others adjourned to the ladies' reception room. Those attending the dinner for the ladies were Mrs. Clapp, Mrs. Waldo, Mrs. Potter, Mrs. Davis, Mrs. Holbrook, Mrs. Turnbull, Mrs. Greene, and Mrs. Cleverdon. — The delightful location and setting of Toy Town Tavern, in Winchendon, Mass., combined with the fine weather, were ideal for the week end. Those attending the outing were Mr. and Mrs. W. J. O'Hearn, Mr. and Mrs. E. M. Potter, Mr. and Mrs. Carl Sittinger, Mr. and Mrs. Lewis Waters, Mr. and Mrs. Philip Taylor, Mr. and Mrs. Charles E. Greene, Mr. and Mrs. J. Theodore Whitney, Mr. and Mrs. Gordon G. Holbrook, Dick Bicknell, John Gray and his son Jack, Arthur Curtis, Dick Goodwin, Hal Manson, Dud Clapp, Dallas Brown, Bob Burnett, Cliff Hield, Stuart Sneddon, Jack Babcock, and Herb Cleverdon.

The golf course was well patronized by Bill O'Hearn, John Gray and his son, Hal Manson, Dick Goodwin, and Carl Sittinger, while the only two energetic enough to use the tennis courts were Jack Babcock and Bob Burnett. During the evening the ladies played bridge while most of the men had much to talk about in a delightfully appointed lounge. — It was a happy occasion, and a vote of thanks was extended to the committee, composed of Charlie Greene, Dud Clapp, Hal Manson, and Bob Burnett. — After dinner on Sunday the party broke up early to meet again the next day at the Alumni Day luncheon and Technology banquet at the Hotel Statler.

Louis French of Milwaukee was accompanied by his wife and two daughters, when he visited his oldest daughter in Cambridge early in June. The occasion of this visit east was twofold — first, to attend the graduation of his daughter Barbara at Skidmore College in Saratoga; and second, to make acquaintance with his new granddaughter in Cambridge. — It is with deep regret that your Secretary announces the passing of Tyler W. Carlisle on August 14 at Shaker Heights, Ohio. — Harry Hale who is colonel of the 376th Infantry regiment, was in command of the Reserve Officers' Training

Camp at Fort Devens, Mass., this summer. — HERBERT S. CLEVERDON, *Secretary*, 46 Cornhill, Boston, Mass.

1911

At the moment the big news is that Ted VanTassel, X, has accepted the chairmanship of the thirty-year reunion, to be held from June 6 to 9, 1941. He will soon appoint and assemble his committee, after which the place will be selected and announcements issued to all. Of course you have already set down the dates, and you remember that the final day is Alumni Day at the Institute. — Speaking of Alumni Day, '11 participation in last June's affair was shared by eighteen classmates. Two sons of '11 men were graduated this year: Norman Bruce Duffett, X, and Samuel Isaac Omansky, V, each son being graduated in the same course his dad had pursued. Norm Duffett and his wife were on from Niagara Falls, while Morris Omansky and his wife, residents of Brookline, were present throughout. — Ted Parker, I, and his wife were here from Knoxville, Tenn., for the graduation of their daughter from Walnut Hill School and so were able to attend all the events of Alumni Day. Another welcome surprise was to find Frank Osborn, III, back for the first time to a reunion. He was on one of his occasional visits from South America and was present at all functions. Others who attended throughout were George Cumings, VI, Obie Denison, VI, Jack Herlihy, II, Roger Loud, VI, O. W. Stewart, I, and Ted VanTassel, X. Present at both the luncheon in Du Pont Court and the banquet at Hotel Statler were John Alter, IV, Tommy Haines, II, Art Leary, XI, and Alec Yereance, I. Alf deForest, XIII, and Thorne Wheeler, X, were present at the luncheon, while Dick Ranger, VIII, from New York, and Emmons Whitcomb, X, attended the banquet.

It is with profound sorrow that I record the passing of a fine fellow, George Estes, II, who died at a Lewiston, Maine, hospital on June 5 following a four months' illness. After continuous service since graduation, he had become treasurer, a year ago, of the Continental Mills at Lewiston, assuming the entire management as successor to his father. He was graduated from Exeter in 1907, and his quiet, unassuming manner, coupled with a very friendly spirit, despite his deafness, made many ready friends for him. In 1915 he married Dorothy Plaisted of Dubuque, Iowa, and besides her he leaves a daughter, Marion, a student at Oak Grove Seminary.

At the final Alumni Council meeting of the 1939-1940 season, Jack Herlihy, Emmons Whitcomb, and I sat together and were pleased to hear Ted Parker announced as a member of the Visiting Committee of the Department of Military Science and Tactics for the ensuing year. — Prior to his return to South America, where he is with the Andes Copper Mining Company, Potrerillos, Chile, via Chanaral, Frank Osborn wrote: "Just a line to let you know how much I appreciated your kindnesses shown to me on

Alumni Day in June. I enjoyed seeing you and others more than I can put in words." — I assure you the pleasure was mutual, Frank. — Jim Duffy, VI, head of James F. Duffy and Company, 38 South Dearborn Street, Chicago, breezed into my office in early August. He and his wife and youngsters were East to see Jim's mother, eighty, still in good health in Dorchester. Jim and I, you may remember, came to Worcester together after graduation to join forces with the electrical cable works of the American Steel and Wire Company, so we have a lot in common.

Breaking twenty-nine years' continuous employment with the same concern, Morell Mackenzie, II, resigned this summer as vice-president and director of Sayles Finishing Plants, Inc., Phillipsdale, R.I., according to an announcement by J. W. Manley, President. From the Providence evening *Bulletin* of June 22 we learn: "Nearly 100 associates and friends of Morell Mackenzie, recently retired Sayles Finishing Plants official, gathered last night at the Metacommet Golf Club to tender him a testimonial dinner. Company officials, executives and employees who spoke all told of their years of association with Mr. Mackenzie, and united in expressing their hopes that he would find success in any new venture upon which he might enter. Mr. Mackenzie has not revealed his plans for the future. A silver pitcher, appropriately engraved, was presented to Mr. Mackenzie by the toastmaster, Leon E. Smith." No reply was received from a letter addressed to Morell at his Providence home address, but from Bill Hodgman we learn that Morell has entered the oil game with an affiliate of the First National Petroleum Trust having producing wells in Texas with headquarters at Dallas. Good luck to you, Morell.

An intriguing article in the *Saturday Evening Post* for June 29, titled "Black Magic and Men in White," described the humanitarian work of the 1938 Gill-Merrill Expedition, conducted by Richard C. Gill, once a bedridden victim of spastic paralysis, who recovered by going to South America and learning the secrets of curare, a poison brewed for curative purposes by Amazonian Indians. The expedition was sponsored largely by our own C. H. S. Merrill, I. Look it up if you missed it. I wrote to Fat after reading it and said we'd like him at a 1911 dinner soon and he replied from his summer home at Sorrento, Maine, after a return from Kalamazoo, Mich., where he had been visiting the plant of the Thermiusul Corporation, of which he is chairman of the board. He said he hoped to be at our Seven Come Eleven dinner at Walker Memorial on November 7, if he is not in the West, "not because I have a liking for speaking or have anything interesting to say, but because I should like to see the gang again and to get the booby prize in the bowling which follows — it being always comforting to feel that there is something about one's dexterity that warrants a prize. . . . It is reassuring to know that you do not expect the

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defense of America to interfere with our reunion next June. I hope that we will not all appear in our uniforms of the Old Gentlemen's Home Guard or whatever branch of defense we are able to qualify for."

Just a month later, in *Life* for July 29, did you see the "Speaking of Pictures" entry? It was a story of the Aviation Country Club at Hicksville, Long Island, N.Y., opened in 1929 — oldest and swankiest flying club in the land. A snap of Monk deFlorez, II, was captioned: "Luis deFlorez, aviation inventor and club's vice-president, first flew in 1912." There was also a snap of Monk's plane, captioned: "Beechcraft, five-place, with a cruising range of about 750 miles, and costs from \$13,980 up. . . ." — I am happy to report that my wife came through her early June operation splendidly. Both of us are indeed grateful for the many expressions of good will and sympathy that came to her at Worcester City Hospital.

A particular cause of pride and satisfaction is the way in which 1911 has come through in support of the new Alumni Fund. Comparisons are always interesting, and our percentage of 20.2 contributing is well ahead of the other six classes which were in Technology with us during 1907-1911. Our nearest competitor is 1913, with 18.2 per cent, according to official figures issued in August. Not the least of the joys of a Class Agent in connection with the fund is the satisfaction of the many letters from classmates which accompany contributions. — Don Bakewell, II, wrote from Pittsburgh: "Since 1937 I have been vice-president of the Blaw-Knox Company of Pittsburgh, steel fabricators, steel and iron foundries, machinery builders, pipe fabricators, and so on. My work keeps me away a great deal, for in addition to my regular job I have had wished on me the presidency of the Steel Founders' Society of America (a national trade association) and the vice-presidency of the National Founders' Association. We are exceedingly busy now trying to convert some of our peacetime facilities into rearmament producers. In between times I continue to play a mediocre game of golf."

Lloyd Cooley, X, reported from Chicago that he saw Ernest Symmes, V, of the Hercules Powder Company, Wilmington, Del., at the Buffalo meeting of the American Institute of Chemical Engineers earlier this year; and from George Cowee, III, vice-president of Liberty Mutual Insurance Company of Boston, I received a definite promise that he would attend our next class dinner. — A. T. Cushing, I, valuation engineer with the United States Department of Agriculture at Kansas City, Mo., has changed his office address to 329 United States Courts Building, 811 Grand Avenue. He said in mid-September he was getting ready for a big hearing on rates at the St. Louis National Stockyards and about October 1 expected to go to Indianapolis to make an appraisal of the stockyard there. Cush writes that his daughter, Emma Mae,

entered her sophomore year at Drury College, Springfield, Mo., this fall and was about to be initiated into the Kappa Delta Sorority. His two boys are at home, Don being a senior in high school, much interested in science, and Gerald, in the fourth grade.

Minot Dennett, II, head of M. S. Dennett Company, 334 Lexington Building, Detroit, Mich., wrote that "it may be looking a long way ahead, but I am hoping that I will be able to plan a trip East next June for our thirtieth reunion." — That's the spirit, Minot. — Gus Frigon, VI, assistant general manager of the Canadian Broadcasting Corporation in Montreal, said he wished his contribution might be larger, "but we are starting to feel the weight of our war activities in Canada, with taxes piling up rapidly." He added: "Besides, this year I will contribute my small share to the M.I.T. Alumni by sending my son, Raymond A. Frigon, to the Institute for postgraduate work. This does not mean very much to the Treasurer, although it does to me, but it is the best way I can afford to express my pride of being a Tech man myself. I promise to make a cross on the June leaf of the first 1941 calendar which reaches me and if you people do not ask too much for your American dollars, I may have the pleasure of spending a few days at the 1911 class reunion." — Also from Canada has come a definite reunion suggestion, as requested in last year's concluding notes, from Paul Kellogg, IX, 970 Sun Life Building, Montreal, who writes:

"Here is a good idea, but I must say I am not too hopeful that it will be accepted. I think the whole gang ought to come to Montreal, get on a river steamer, and hold the reunion while we are taking a trip down the St. Lawrence and up the Saguenay. This is a glorious trip, the boats are excellent, and an entire boat can be chartered. The length of the trip is three nights and two days, and Canada needs the dollars. If exchange rates don't change, all Americans get an automatic 10 per cent discount on the cost of such a trip." — All suggestions are most welcome and are being turned over to Ted VanTassel for his committee to consider. It was also fine to hear from you, Paul, and to learn that your "whole family is well and business is prospering."

W. J. Seligman, III, importer at 240 Madison Avenue, New York City, said he was "only sorry that general conditions prevent a larger check," adding, "if the Japanese go into the Dutch East Indies, I will be out of business overnight!" — Ted VanTassel, X, 390 Newtonville Avenue, Newtonville, wrote that he had recently addressed the Marlboro (Mass.) Rotary Club on "The Making of Whisky." "Imagine my pleasure and surprise," he added, "at sitting with Johnnie Bigelow, IV, whom I had not seen for 10 these many years. In fact, John is secretary of the club and seems to be doing a swell job of it." — Had a peach of a letter from Bill Warner, I, oil operator at Nowata, Okla., with this thought standing out: "Times like

these make me realize how fortunate the country is to have an institution like M.I.T. and also the fine body of trained men it has produced. If this country comes through this crisis in anything like the shape it is now in, it will be due, to a large extent, to the leadership and ability of such technically trained men. . . . I hate to admit it, but I was in Boston for a few days in May, flying East to see my son, who has been attending the Harvard Graduate School. Incidentally he is quite a piano player and I'm sorry you could not have met him. I spent only a few days there, and went to New York, leaving for home via plane after two days, so did not see any of my '11 friends." He then reported having driven with his wife through Toronto, some time ago, meeting and dining there with O. H. Shensstone, I, and his wife, and concluded thus: "We are about all in the same boat — have sons who are of military age . . . which makes this a period that is uncertain and unpleasant, to say the least. All we can do is to hold our chins up and assist others who seem at this time to be ready to cave in. However, my plans now are to attend our class reunion next June, regardless what happens!" — Thanks, Bill; we'll be seein' yer.

Early this summer the papers carried an Associated Press dispatch concerning a five-point program of airport development presented by the New England Council to solicit the interest of chambers of commerce in this section. It read, in part: "In a letter to commerce boards, J. Burleigh Cheney [II], chairman of the Council's Aviation Committee, suggested airport development was primarily a community problem, and urged Chambers of Commerce to promote interest of local authorities in their airports. The Cheney letter stressed public ownership of airports to insure development, zoning and permanence; state approval of sites to conform with state and federal plans and the establishment of as many auxiliary landing fields as is practicable."

Fred Daniels, VI, was re-elected in June for a five-year term as a trustee of Worcester Polytechnic Institute. — In the June issue of *Boston Business* came word that "United Air Lines and its district manager, Emmons J. Whitcomb [X], claim a hand in the winning of the championship of the International Hockey League title by the Providence Reds. — United flew the team a total of 117,867 passenger miles during the season just closed." — Just as these notes are being completed comes a gaily stamped letter from Oslo, Norway, passed by the German censor. It took but thirteen days to reach here. You've guessed it — it's from Ove Collett, III, and is surprisingly cheerful: "It was a reminder of olden happy days when I received your circular letter of June 10. You will understand and appreciate the reason why I, under the present conditions, cannot contribute to your funds. The only contribution I can make to the M.I.T. is my own son. He has been accepted, and if I can get him a passage, he will start on the course of industrial en-

1911 Continued

engineering some time this year, otherwise next year. As soon as conditions are more favorable, I am going to contribute to your funds again. I also hope that in a not too distant future I shall be able to visit the old place myself." — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Worcester, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

Word has just been received of the death of Lester G. Metcalf, II, on June 6. Metcalf served as captain in the United States Army during the World War, going with the Union Oil Company of California upon his discharge. He was successively superintendent of their *oleum* refinery, later becoming assistant manager and then manager of all refineries. As manager of their marine operations, he had complete charge of their tanker fleet replacement program. He is survived by his widow; a daughter, Barbara; and a son, Darby.

Russell M. White, VIII, is now located in Mexico City, care of Wells Fargo and Company Express. — Phillip G. Lauman is now located at the United States Navy Yard, Cavite, Philippine Islands. — Clarence McDonough has left his position as chief engineer and general manager of the Lower Colorado River Authority and is now associated with Frederic R. Harris, Inc., consulting engineers, at 27 William Street, New York City.

Esther Schell, daughter of Erwin H. Schell, was married in June to William H. Prosser of Louisville, Ky. They plan to make their home in Cambridge. — At the Alumni Day dinner in Boston last June the following 12 men were at our table: Harvey S. Benson, Jim A. Cook, Page E. Golsan, Jerome C. Hunsaker, Walter W. Lang, Erwin H. Schell, and your Secretary.

A note from Johnny Noyes states that he saw Walter O'Brien, II, a few weeks ago in Denver, Colo. O'Brien is connected with a local utility company. Johnny also reports having received Page Golsan's new edition of the "Class Register" and says he always packs a copy on his travels. A communication from Mrs. Johnny Noyes announces the marriage of their daughter, Lillian Frances, on September 12. — We have had a short note from Juan Matamoros, I, whose letterhead identifies him as Ingeniero Civil, San Jose, Costa Rica. Juan says in part: "I wonder if you remember even my name? My voice comes to you with a wave-length thirty-two years long, when we were classmates at M.I.T. I remembered your name and looked you up in the new 'Register' that just reached me. So I say hello to you and hope and wish you have spent the last thirty years enjoying a prosperous life. . . ." The balance of the letter relates to some business inquiries he wished to make.

We have also secured a fine letter from David Dasso, II. You will recall that we previously reported his appointment as secretary of the treasury of his native

Peru. "Thanks for your kind congratulations. . . . After all, steering the financial policies of a government is not essentially different from the work of an executive in a substantial commercial concern. The country of Peru is a large producer of raw materials for export, and the main problem consists in keeping up employment, retaining volume of production on a wide range of products, maintaining low production costs, keeping down the overhead, and locating the market where the product can best be sold. The latter job has been considerably simplified since Germany reduced to a minimum the number of possible and impossible outlets. It has been further simplified by the action of England and others, who have seen to it that no ship heads for any point within Hitler's dominions. Mr. Roosevelt and friends are also helping by maintaining substantial tariff walls to protect our exporters from extending unsound credits in a large territory located north of Panama.

" . . . There is at least one difference between a commercial job and that of a secretary of government, namely, taxation. I do not recall ever having used that weapon in my commercial and technical career. It is pretty much like asking your suppliers to pay back to you a share of your own payments, and not altogether different from asking the customer to pay an overprice for the privilege of doing business with you. There are other minor differences. You depend upon the opinion of your own employees and your customers as to your qualification and suitability for the job, and thus you have to keep your mind on what they like and dislike before telling them what to do.

"Regarding specific financial problems of Peru, I would say that in general the most important is that of shifting our economic bases towards the United States. It seems reasonably clear that no matter how the war ends, the consequences would inevitably point to the strengthening of political and commercial ties within the American continent. In particular Peru must find a way to develop the production of such goods as the United States can absorb, and the United States must concentrate upon, and give preference to, purchases in South America which are today conveniently obtained from far across the oceans. These ideas all appear to be common sense but will require tremendous concentration and pressure because the enactment of this policy will inevitably bring difficulties and a certain degree of confusion, which, of course, businessmen all over the world refuse to accept unless obliged by superior forces. . . ."

The Alumni Office has lost track of the following members of our Class: John W. Baker, whose last known address was 52 Central Street, Auburndale, Mass.; Herbert S. Cummings, whose last known address was 104 Sharon Street, West Medford, Mass.; and Edward H. Guilford, whose last known address was 714 Harvard Avenue, Montreal, Quebec. Can anyone supply me with their present addresses? — FREDERICK J. SHEPARD, JR.,

Secretary, 124 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw-Hill Publishing Company, Inc., 330 West 42d Street, New York, N.Y.

1913

We filled a small table at dinner on Alumni Day in June with Sage, Townsend, MacKinnon, Rollason, Ben White, Eichorn, Murdock, Ready, and Bill Ready, Jr. All of us live around Boston, except Geoff Rollason, who left his aluminum die-casting troubles in New Jersey to be with us. Young Ready took his degree at the Institute in June and has a good job, subject to the demands of the R.O.T.C. Rusty Sage, Placement Officer, said that there were plenty of jobs for 1940. We were glad to find Bill Ready, our genial Class President, much improved in health after his serious illness. We ate a good dinner, and indulged in the usual kidding and small talk. We gave the small group of 1940 boys near us some spirits, which they had to spread very thin, but it did liven things up. The tone of the dinner at large was rather subdued, probably due to the gloomy war news.

Larry Hart was elected a vice-president of Johns-Manville Sales Corporation this summer. Larry has tackled his job of Class Agent of the Alumni Fund in his characteristic head-over-heels style, and he doesn't like our running behind the classes of 1911 and 1915. He writes: "On July 15, of the total alumni registration, 10.6 per cent had responded with contributions; of the total 1913 registration, 14.5 per cent had responded; of the total 1911 registration, 17.1 per cent, and of the 1915 registration, 14.7 per cent. I am making no reference whatsoever to the amounts in dollars. What we are interested in is a broad representation by 1913 in support of the Alumni Fund." — Please look up your contribution card and give something to pull up this niggardly record of only one contributor in seven. I can't believe that we are a bunch of 14 percenters at heart.

I saw Arthur Kenney, X, V, for a few minutes in his office in Wilmington, Del., this summer. Arthur is doing x-ray research work for Du Pont. His son Stephen is ready for Harvard, and his daughter Sylvia has passed her entrance requirements for Wellesley. Mrs. Kenney, who was Marion Coes' 18, X, is a translator in one of the Du Pont departments. Paul V. Cogan, II, Bethlehem Steel Company salesman, has removed from Philadelphia to Sellersville, Pa. Gene N. Burrell, II, is hydraulic engineer with the Tennessee Valley Authority and lives in Chattanooga, Tenn. Franklin A. Bent, X, has gone to Berkeley, Calif., from Rochester, N.Y., where he was chemical engineer with Eastman Kodak Company. Bradley T. Ross, X, is living in Rensselaer, Ind., and Halsey Elwell, II, has removed from North Adams, to South Weymouth, Mass.

Two newspaper clippings bring sad news. The *Vermont Phoenix* of Brattleboro, May 31, tells of the death of Frank

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J. Brauer, III. He had been with the Bureau of Internal Revenue at Greenfield, Mass., for fifteen years. The Chicago daily *News* of July 17 contained a paragraph on the death of Paul S. Moyer, X, at Lake Forest, Ill. He came to the Institute from Dartmouth, and at the time of his death was chairman of the board of the Aridor Company, manufacturers of metal screw caps. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 784, Pawtucket, R.I.

1914

Another successful Alumni Day has come and gone. As usual, before the dinner at the Hotel Statler, we held an informal meeting, during which we telephoned Porter H. Adams, who was confined to his bed, and exchanged greetings with him. Those attending Alumni Day events were Affel, Aldrich, Atwood, Clisham, Corney, Crocker, Dickson, Fales, Hadley, Leigh Hall, O. C. Hall, Hamilton, Mackenzie, Swift, Tallman, Trufant, and your Secretary. Professor Keyes again honored us with his presence, and the ubiquitous William Jackson can always be counted on at our pre-prandial gatherings.

The Alumni Fund is perking along, and, as would be expected under the leadership of Ross Dickson, our Class is making a good showing. Your Secretary has occasionally met a '14 man who does not have a clear idea of what this Fund is for. Remember, first, that it replaces alumni dues (principally a subscription to *The Review*). Thus, a payment of five dollars only places you even with the old dues schedule. Second, it replaces sporadic drives for large funds, such as that for endowment in 1919, that for dormitories, and the more recent one for recreational expansion (swimming pool, and so on). The annual fund idea is based on the experience of other colleges that smaller annual contributions are less painful to the donor than an occasional large one. Our Class should show about \$25 a person as an average figure. If you have not sent in yours or feel that you can bring up the average, which is still below the \$25, Ross Dickson or the Alumni office will welcome a prompt remittance from you.

The preparedness program is involving many '14 men. Some of the appointments which have come to the attention of your Secretary follow: Norman MacLeod, past President of the machine tool industry trade association, has been appointed to William S. Knudsen's committee to coordinate the activities of the machine tool industry in the national defense program. — Dinny Chatfield has been appointed to the subcommittee on aerodynamics of the National Advisory Committee for Aeronautics. — Your Secretary is serving on the Institute of Radio Engineers defense committee. — Army expansion has quite changed the winter plans of Alden Waite, a major in the Chemical Warfare Service. He had been at Maxwell Field, Ala., and had been detailed to the Army War College at Washington. Because of the new army pro-

gram, the War College was closed, and Alden was transferred instead to the office of the Chief of Chemical Warfare Service. Hardly had he arrived in Washington when a transfer came assigning him as chemical warfare officer of the new Armored Corps (Panzer Corps) forming at Fort Knox, Ky. There he is living under field conditions.

In addition to the appointment mentioned above, Dinny Chatfield has been promoted in his own company, the United Aircraft Corporation, at Hartford. In order to expedite the tremendous expansion of that company, Chatfield has been made executive assistant to the Vice-President and is in charge of the administrative functions of the general offices. He was formerly director of research. Another honor that has come to him is appointment to the Institute's Visiting Committee for the Department of Aeronautical Engineering. A similar appointment in the Department of Chemistry has come to Roger Williams. Nominations for both appointments came from the Alumni Association.

It is with great regret that the death of Newell A. Thompson, Jr., in New York City on June 5 is announced. Thompson had been ill for several months as the result of a nervous breakdown, but it had been thought that he was well on his way to recovery. He had spent a large part of the time since leaving the Institute in China with the Standard Oil Company, and later returned to New York to become associated with the export division of the Tidewater Oil Company, by whom he was employed at the time of his illness. He is survived by a wife and two daughters.

Better Roads for July contained an item announcing the American Institute of Steel Construction awards for the most beautiful bridges completed in 1939. Honorable mention in the large bridge class went to the Allegheny County (Pennsylvania) Department of Works, of which Levi Bird Duff is chief engineer. The award was for the Highland Park Bridge. The 1939 large bridge competition was particularly keen, and included the Bronx-Whitestone Bridge over the East River. — On the opening page of the September *News Edition*, published by the American Chemical Society, is a picture of Ray Dinsmore and a most interesting article by him, entitled, "Chemigum — A New Elastomer." While Ray tells a perfectly marvelous story of the Goodyear Tire and Rubber Company's synthetic-rubber development program and its success, most '14 men will recall the fact that Ray is quite a raconteur in other fields as well.

There have been several items pertaining to Dean Fales's automotive activities, particularly in the safety field, including a whole column in the June 12 *New York Times* reporting an address he made at White Sulphur Springs, W. Va., before the Society of Automotive Engineers. Dean, however, selects as his *pièce de résistance*, labeling it "Success at Last," a two-column article in the June 24 Biddeford (Maine) daily *Journal*. The

occasion? None other than his appearance as guest speaker at the annual banquet of the Kennebunk Alumni Association and his induction as an honorary member of that body. Perhaps it was his conscience that bothered him, but immediately after these bursts of publicity Dean departed for California, and although the result of the Hollywood visit has been reported to your Secretary by our local correspondent, well documented by photographs of Dean in action, space does not permit further details here. Dean promises to tell about it at the next '14 dinner. The first official fall appearance of Professor Fales was at Framingham, Mass., at the exhibition of old automobiles conducted by the Veteran Motor Car Club of America. Johnnie Leathers also took part, appearing in one of the old racing cars in action and also as chairman of the pageant committee showing the development of cars from 1898 to 1915. Fales drove an ancient French car in this pageant and appeared in the garb of a New York French chauffeur of bygone days. His son, Ted, appeared on the front seat with him attired as a footman of the same period.

Ormonde C. Clisham has been devoting some time of late to his artistic activities. Pencil drawings are his specialty. In an exhibition sponsored by the Massachusetts Federation of Women's Clubs, at Swampscott in May, Clisham had a sketch of a Maine farm and another of a covered bridge. He is a member of the Boston Businessmen's Art Club and of the Copley Society.

The engagement of Gertrude Benjamin to Mr. Lawrence Steimen has been announced, with an early wedding scheduled. Miss Benjamin is the daughter of our classmate, Harold C. Benjamin, of Watertown, Mass. — Clarke Atwood reported seeing Skip Dawson out sailing at Edgartown, Mass., this summer. Skip had a son at the Tabor Academy (Marion, Mass.) summer sailing school. — Frank Ahern has made his annual inspection trip to Uncle Sam's national parks, and in Montana the park naturalist, on learning that Frank was an M.I.T. man, said that a little while before he had met an M.I.T. man in Mexico City, who was quite a chap. It turned out to be Fred Van Etten. Thus does a great reputation spread. — H. B. RICHMOND, *Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York, N.Y.

1915

What a reunion! One hundred and four classmates attended, and were joined by many others for Class Day at the Institute on June 3. The following is a list of those who were present at the Cape or at Class Day: Barbara and Virginia Thomas, Mr. and Mrs. Bertram Adams and three daughters, Mr. and Mrs. A. H. Anderson, L. H. Bailey, Mr. and Mrs. W. H. Brackett, K. K. Boynton, W. D. Bradley, M. F. Brandt, E. R. Brigham, Mr. and Mrs. H. W. Brown, Mr. and Mrs. E. J. Caselman, Mr. and Mrs. L. H. Chellman,

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A. S. Dana, Mr. and Mrs. M. B. Dalton, C. T. Dunn, J. N. Dalton, C. H. Durkee, Mr. and Mrs. H. F. Daley, R. T. Friebeus, F. R. Foster, Mr. and Mrs. N. L. Foster, H. S. Frazine, Mr. and Mrs. S. A. Guthrie and Miss Alice Dorr, Gabe and Tess Hilton, C. W. Hale, Mr. and Mrs. C. W. Howlett and daughter Betty, Ralph Hart, Mr. and Mrs. Abe Hamburg with David and Ruth, Mr. and Mrs. Ben Hurvitz, John Homan, Mr. and Mrs. Seward Highley, C. Loring Hall, Mr. and Mrs. A. E. B. Hall, R. L. Hayward, Mr. and Mrs. F. J. Herlihy, F. R. Jones, R. P. Joslyn, Mr. and Mrs. K. S. King, H. L. King, Parry Keller, Mr. and Mrs. Bernard Landers, B. W. Lassen, Mr. and Mrs. H. W. Lamson, E. M. Loveland, G. V. Maconi, A. S. Morrison, Mr. and Mrs. F. E. Murphy, A. W. Mack, R. W. Mitchell, W. R. McEwen, C. G. Norton, Mr. and Mrs. J. B. Neal and daughter, Mr. and Mrs. J. H. O'Brien and daughters Mary and Alice, Mr. and Mrs. E. E. Place, D. W. Perin, Mr. and Mrs. Waldo F. Pike, G. A. Palmer, Mr. and Mrs. F. E. Parsons, G. L. Peakes, Tower Piza, H. B. Pickering, L. F. Quirk, Mr. and Mrs. G. T. Rooney, Mr. and Mrs. C. M. Runels and daughter Miriam, Mr. and Mrs. H. C. Sheils with daughters Marjorie and Theresa and son Bill, P. L. Small, T. F. Spear, W. B. Spencer, Mr. and Mrs. F. P. Scully and sister Genevieve, H. D. Swift, W. A. Swain, E. R. Stearns, C. E. Sifton, E. L. Sullivan and sister, Mr. and Mrs. Kebe Toabe, J. A. Tobey, E. A. Weaver, Mr. and Mrs. M. I. Woythaler and son Bill, Mr. and Mrs. F. E. Waters, E. A. Whiting, Mr. and Mrs. S. L. Willis and daughter Peg, C. F. Wolfe, H. H. Whitcomb, C. W. Williams, Mr. and Mrs. L. H. Young, L. H. Zepfner, O. W. Hilbert, H. E. Morse, C. B. Malone, T. G. Brown, M. E. Hill, C. G. Paine, H. W. Anderson, J. B. Franks, Jr., C. W. Lacy, H. L. Marion, L. V. Clark, D. O. Hooper, G. C. Wilson, R. A. Warren, F. G. Purinton, J. M. Livermore, M. W. Cowles, W. Tallman, Mr. and Mrs. P. L. Alger and two sons, L. H. Bailey, E. Burtner, A. A. Cook, C. T. Hansen, D. H. McMurtrie and two sons, Mary P. Rice, J. J. Sindler, and O. R. Freeman. — The following were guests of the Class: Orville B. Denison '11; Mr. and Mrs. A. H. Wechsler '21, Frances Clarke, and Mr. and Mrs. Alford M. Rudnick, of Brookline; and Mr. and Mrs. Charles M. Davidson of Wellesley Hills.

All roads led to Oyster Harbors Club, Friday night, May 31, to start the party with a bang. Saturday and Sunday saw golf, swimming, reminiscing, sailing, and the usual indoor sports that make our class parties so successful. The class picture on Sunday in the brilliant sun on the beautiful green lawn in front of the clubhouse was most successful. An out-of-doors shore dinner followed, and in the afternoon we were entertained by Bert Adams' demonstration of magic and Herb Swift's class movies. Had I a lexicographer's vocabulary I still could not do justice to a description of the reunion, but everyone who was there

knows what I would say. The good time at the Cape left hardly anything further to be desired, but even the committee's fondest hopes were excelled when we finished the reunion in Boston. We lunched together on Class Day and then listened to Louie Young, who represented our Class on the Class Day program. He did very well considering the loss of his voice; in fact there were times at Oyster Harbors when we thought Louie himself was lost.

The cocktail party at the Statler was really tremendous. I am sure the ladies and guests of our Class added greatly to the gathering. While everyone was busy getting classmates' names on souvenir programs, Ken King outsmarted them by getting the signatures of classmates' wives and the lady guests. This last should later prove rather valuable. . . . Nice goin' Ken! — For the success of the party thanks are due to many: first, to all the members of the committee, who gave to us willingly and unstintingly of their time and personal interest in getting such a large attendance; second, to the many Mr. Smiths who so generously and graciously gave the attractive and valuable gifts that we received. These included a gold-plated safety razor in a leather case, a set of knitted Hi-Jacks for glasses, a set of initialed Spir-It cocktail sticks, and a cardinal and gray molded plastic ash receiver, all suitably marked to commemorate the reunion. The ladies attending received compacts. In addition, all the liquid refreshments and the entire cocktail party at the Statler with the favors were donated. The reunion class booklets were published and given by one of our men. The reunion committee appreciates the co-operation of the members of the staff at the Institute who helped out with the many details of our program. Particular praise and thanks go to the ladies' committee that did such an admirable job all the way through from extending greetings on Class Day to being hostesses at Dr. Compton's dinner.

I personally want to thank the men at the reunion for the generous check which they presented to me. With part of this money I bought two silver plates appropriately engraved for George Rooney and myself as memos of the reunion. As George shared the work and responsibility with me, he also shares a boastful pride of this splendid gift. This pretty silver plate will take a cherished place in my sentiments with the beautiful watch you chaps gave me in 1935. I think particular praise should go to the New York and Philadelphia delegations who turned out so forcefully under the able guidance of Hank Marion and Charlie Williams of New York, and Herb Anderson, Henry Daley, and Gene Place of Philadelphia.

Many movies and still pictures were taken. With Herb Swift's kind assistance, we are combining the movies into one reel which we can show at class dinners, and which is available for any classmate's use at any time, simply by writing me. If anyone has pictures or movies and has not already sent the pictures to me or

the movies to Herb Swift, please do so at once so that we can make a complete set of pictures and the full reel of movies. — Many loyal men who planned to attend the reunion but were prevented, sent wires. This dinner was one of the outstanding events at the Cape, and an impressive moment was our silent toast to the deceased members of the Class, climaxed with the singing of the "Stein Song." The long-distance prize went to Ken Boynton, who flew to the reunion from Mexico City. Other long-distance attendants were Carl Dunn from Chicago, Ham Frazine from Cincinnati, Loring Hall from Detroit, Phil Small from Cleveland, Herman Morse and Parry Keller from Akron, and good old Guernsey Palmer in the flesh from Houston, Texas. I cannot enumerate all the individuals who stood out prominently during the reunion, but fairest of all was Mary Plummer Rice who attended all the activities on the Class Day program Monday with us. Mary is a grandmother, but you would never guess it.

There were no casualties. I think it is a tribute to know that at no dinner or reunion of our Class has there been a charge for breakage or damage. Everyone had a most enjoyable time and it is extremely gratifying to have the management of Oyster Harbors Club write us several complimentary letters on the way the reunion was handled. Twenty-five years have passed in back of us. The reunion is over. But the class notes go on, and remember, you must still "help Azel." — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline, Mass.

1916

It is your Secretary's sad duty to call attention to the passing of our classmate, William C. McDonald. The story is best told by quoting Mrs. McDonald: "My husband, William C. McDonald of Palmer, Mass., died in La Crosse, Wis., on June 15, after a two months' illness from streptococcus infection in the blood stream. After he was graduated from M.I.T., he was employed by the Standard Oil Company of New York in their Far Eastern division and lived in South China and Siam for about ten years. During this time we were married, and our son was born in Hong Kong. Because of my poor health, he resigned from Socony and returned to the States to live.

"The next ten years he spent in business projects of his own, living in Chicago, New Haven, Conn., and Norwalk, Conn. He met with little success during those years, finding it difficult to adjust himself to the States again and to forget the Far East. Four years ago he went to La Crosse, Wis., as salesman for Segelke and Kohlhaus Company, a milling concern. He also did extensive work in designing and drafting for them as well as in planning homes for local lumber companies. It seemed that when he had finally found himself in the sort of work he loved and to which he was so well adapted, his life had to end. Our son, William, is now eighteen and our daughter, Shirley, thirteen."

Walt Binger broke into print again on June 19 in the New York *Times* when the new East River Drive link was dedicated by the mayor and the borough president. Before the ceremonies, Walt described the project to a large group of persons who were taken along the East River water front in two excursion steamers. From the picture which illustrated the article it is evident that Walt has retained his youthful figure and practically all of his hair. — During the summer, in the general expansion and development of the United Aircraft Corporation and its subsidiaries, Charles J. McCarthy, otherwise known as Charlie or Mac, was appointed general manager of the Vought-Sikorsky division. This is a huge plant located at Stratford, Conn., where naval aircraft are built. Charlie is living in Fairfield, Conn., in a very attractive, reconditioned, old Colonial homestead which he and his charming wife, Betty, have furnished and decorated to the queen's taste.

Joe Barker, dean of engineering at Columbia University, was elected vice-president of the American Institute of Electrical Engineers. — Bob Wilson broke into print all over the United States in June when he accepted an appointment on the staff of Edward R. Stettinius, Jr., with the National Defense Advisory Commission. He is serving as a consultant on petroleum products. Bob already has thirty-three lines in *Who's Who in America*. This appointment ought to add another few lines. — George Mead, formerly of the United Aircraft Corporation, Pratt and Whitney division, has been appointed vice-chairman of the National Advisory Committee on Aeronautics, a position in which he will assist in facilitating decisions on types of planes, swift standardization of parts, and swift production. — Elmer M. Wanamaker, III, is now assistant research engineer for the Anaconda Copper Mining Company in Anaconda, Mont. Since leaving the Institute he has worked in Poland and Holland.

By the time these notes are published less than eight months will remain before our twenty-fifth reunion in June. Plans must be made, and in spite of the uncertain conditions ahead there will be a reunion. Until such time as a functioning committee takes the matter in hand, your Secretary will welcome suggestions concerning the time, place, and program.

Our worthy classmate, Howard P. Claussen, has published a book entitled *Sidelights on Dog Training*. It is a well-written, well-illustrated booklet of twenty pages, which should appeal to both adults and children who are interested in dogs. In concluding these notes for The Review, your Secretary's sentiments about the assistance he is receiving from classmates is pretty well expressed in quoting from the second to the last paragraph of Claussen's book: "On the other hand, with patience, persistence, with the expenditure of a little time each day, with average aptitude, and with due regard at all times for the limitations of our dumb friends, you should be able to observe substantial progress in elemen-

tary work. . . ." How about some news for The Review? — JAMES A. BURBANK, Secretary, The Travelers Insurance Company, Hartford, Conn. STEVEN R. BERKE, Associate Secretary, Coleman Brothers Corporation, 245 State Street, Boston, Mass.

1917

After a lapse of a year or two, the June reunions were resumed again this year through arrangements made by Ed Doherty and Ted Bernard at Coonamessett Inn, near Falmouth, Mass. Messrs. Beadle, Bernard, Brooks, Doherty, Lobdell, Maguire, McNeill, Sandell, and Stevens met for a quiet and most enjoyable week end. Two or three stopped at Brockton on the way through for a pleasant chat and refreshment with the parents of the Dunham twins. There is little to report of the reunion except possibly about Maguireisms, and the less said of those the better. (Secretary's note: A Maguireism is a low form of a low form of wit.) There was discussion of the twenty-fifth reunion soon due and the general consensus favored the Cape rather than Marblehead or Connecticut as a location. The results of the deliberations were reported to President Eddy, who thereupon nominated Winfield I. McNeill, 105 Hudson Street, Jersey City, N.J., as chairman, with power to appoint assistants and determine upon policy. In the face of Mac's record in other matters and the interest already shown, this twenty-fifth reunion should be a highlight in the history of the Class and the whole alumni body.

Orville Denison '11, with an eagle eye for M.I.T. men in Worcester, has sent us 1917 clippings. Frank Howard is shown in all his glory leading the Worcester Polytechnic Institute seniors as they marched over the new Earle Bridge to commencement exercises. The parade proved a fitting climax to Frank's association with Worcester Polytechnic where he is professor of chemical engineering and was for some time acting head of the department. He has been a member of the executive committee of the Worcester Technology Club. — Word has reached the Alumni Office that Irving W. Young, Jr., died on May 15. No other details are immediately available. — Wesco Waterpaints, Inc., has completed a waterpaint manufacturing plant in Montreal. Stanley C. Dunning is vice-president and general manager of Wesco Chemicals, Ltd., and Canadian Waterpaints Limited. — The New York *Journal of Commerce* reports that Dexter Tutein "has set up in the pig iron and steel business for himself at 230 Park Ave., New York." Also, from the New York *Radio Daily*, we learn that "Paul A. DeMars, technical director of the Yankee Network, has been elected Vice-President in charge of engineering."

From Ras Senter comes a letter chronicling the peregrinations of one Horace Ford: "In April Horace S. Ford, former Bursar and now Treasurer of M.I.T., whom our Class adopted, was in Oklahoma for a meeting of the Eastern College Association and was guest speaker at an

alumni dinner of our Technology Club of Northern Texas on April 9. About fifteen Alumni were present to enjoy a very wonderful talk by Mr. Ford, bringing us up to date on activities of Technology and particularly on the financial picture with respect to the income from investments and from tuitions. I then had the pleasure of showing Horace some Texas 'real estate' which all former Tech emissaries have refused to look at. We drove through Waco, Austin, San Antonio, and Houston, looking over Baylor and Texas universities and Rice Institute. At San Antonio we did a little sight-seeing, visiting The Alamo. At Houston we were entertained by the alumni club sponsored by George Forristall '11. We then proceeded to New Orleans, going by Baton Rouge, meeting William G. Brown '16, who showed us around Louisiana State University. I was just planning to show Horace points of interest in Mississippi and Alabama when he insisted that he had to return to New York by plane immediately for a meeting of one of his committees. We had a wonderful trip and, although it might have been a little long for Horace, I was determined to show him some of the sights that Lobdell has consistently refused to see on the several trips he has made to this part of the country."

Late in the spring Frank Peacock wrote: "I have resigned my position with the S. Morgan Smith Company, though I am still acting as consultant on the wind-power work. I have moved to Watertown, N.Y., and have gone into partnership with a local financier and one of my associates in the S. Morgan Smith Company. We have organized the Hydraulic Equipment Corporation and are entering the field of building hydraulic equipment." — Herman Rogers, formerly host of the Duke and Duchess of Windsor, sends word from Cannes, France, that since the entry of the Nazis he has been unable to get gasoline for his automobile or to buy a bicycle. This note came from a reporter who also confessed to spotting one Leon L. McGrady at the Buffalo airport, and his only comment was that Mac looked "plump and prosperous." — Stan Hyde announces that he is now operating the Ledgewood guest cottages at Popham Beach, Maine, for "privacy, convenience, recreation, and rest — where outdoor joys are happily combined with the comforts of your own fireside." The folder looks interesting and consideration of Ledgewood is recommended to any members of the Class who are considering the Maine seacoast for vacation. Correspondence should be sent to Ledgewood, Phippsburg, Maine. To find the place, follow United States Route 1 to Bath, turn right on High Street and follow Route 209 to the sea.

And again from O. B. Denison comes a clipping stating that Roger Lowell Putnam, the two-term mayor of Springfield, Mass., President of Package Machine Company, and so on, will stick to his job and not be a candidate for the Democratic nomination for lieutenant governor. "By the decision to stick to his job as mayor

1917 Continued

to which he was re-elected last November, Mr. Putnam has, paradoxically though it may seem, stepped nearer to the Governor's chair than he has ever been before and nearer than he would have been had he made the rash decision to run on the State ticket this Fall. . . . We give so much space to Mayor Putnam, who is not a figure in the present campaign, because it is always of interest to spot new figures who may loom large in party councils or public affairs." — A letter to Ted Bernard from Gus Farnsworth (incidentally, Johnny DeBell reports that he ran into Gus not so long ago in the William Penn at Pittsburgh) states: "I was glad to learn that the luncheon, at which we gathered together Ray Brooks, Dad Wenzell, Enie Curtin, Win Swain, and myself, was duly reported. At that time that was the only bit of news I might have contributed. . . ." — RAYMOND STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass. PHILIP E. HULBURD, *Assistant Secretary*, Phillips Exeter Academy, Exeter, N.H.

1918

Thanks to Dennie '11, I have a clipping from the Worcester *Telegram* telling of a fine promotion in the American Steel and Wire Company for our classmate Elmer E. Legge. He has been appointed assistant director of research and is now located in Cleveland. To give a thumbnail sketch of his rise in the company: "Mr. Legge, a native of Brockton, joined the company in Worcester as an efficiency expert in 1920. Shortly afterwards he was appointed spring engineer and still later became a member of the manager's staff. In May 1928, he became head of the company's physical laboratories. From January 1939, to August 1, 1940, he was district director of research. . . ."

Frank R. Creedon, who served as a P.W.A. housing project official in the Boston area, has resigned his post of engineer and assistant director to take up new duties as head construction engineer in the Fixed Fee Branch of the Quartermaster Corps, United States Army. Creedon was project manager of the South Boston housing project and later became P.W.A. district manager for housing in New England. — In *Chemical Industries* for March was an excellent article by Ernest R. Bridgwater, manager of the rubber chemicals division of E. I. du Pont de Nemours and Company, on "Should Salesmen Be Chemically Trained?" I think it would be well for all to read it.

I sincerely hope that all members of the Class have contributed to the annual Alumni Fund, of which Bill Wills is our Class Agent. — Have you all contributed or pledged for the gift for the twenty-fifth anniversary? I haven't had any last word from Maggie as to how the fund stands but hope to have news for you in the next issue.

A long letter came from Jack Hanley in June, giving the class officers hail Columbia for not being present at Alumni Day. I cannot speak for the President, but I suspect he was getting ready for

his western trip. Your Secretary was as busy as a one-armed paper hanger since that was the last week of school, which fact means busy with capital letters. Jack's letter brings to mind the fact that next June the Class will have the first of its children in the graduating class. Each of the Howard twins has a son in '41. The following paragraph speaks for itself: "We were discussing ways and means of having a good turnout at our twenty-fifth reunion. Several facetious suggestions were submitted, the most likely of which seemed to be a promise by Carlton Tucker that he would drink three beers in rapid succession while standing on his head on top of the library dome. He did not seem to take kindly to the suggestion, so we compromised by omitting the dome part." Jack says he went to the Chamber of Commerce Building in Boston in the last of April or the first part of May to hear Maggie expound or orate on the subject "Good Goods — Good Profits — Good Men." He wasn't able to remain after the talk to heckle Maggie, but he says that what he heard was friendly and human. Here is his final paragraph: "I have been in Providence since January 1, 1939, and am back again with the Firemen's Mutual Insurance Company, one of the Factory Mutual group, for whom I worked in Cleveland during the late Twenties. My home address is 78 Waterman Street, Providence. The other half of the top floor of the apartment house, known as Bedlam Manor, is occupied by two other bachelors, one from Yale and the other from Illinois. We never lock the doors, and one Frigidaire or the other is always full of beer. The latchstring is always out for any '18 men who may be in Providence." Thanks, Jack, for your fine letter; wish I could get more like it from other members. — Happy Thanksgiving to everyone, no matter whether you celebrate the first or second one or both. — GRETCHEN A. PALMER, *Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

1919

George W. McCreery has been acting as class agent for the Alumni Fund. I trust that the Class has been in back of him and that a large percentage has subscribed. — The library of the Institute has recently added three books in which '19 authors collaborated: *Problems in Engineering Thermodynamics and Heat Engineering*, second edition, by Charles W. Berry '95, Carl L. Svenson, and Herbert C. Moore '24; *Soil Mechanics Applied to Highway Engineering in Ohio* by Robert R. Litcheiser and K. B. Woods; and *Airplane Structures*, second edition, by Alfred S. Niles '17 and Joseph S. Newell.

Jimmy Reis wrote several months ago that he had been located, for the most part, in small isolated mining camps in the West and Southwest, first in Arizona, then the west coast of Mexico, later in Nevada at Virginia City on the Comstock Lode, and more recently in northern California in the Mother Lode section. Jimmy is working gold property on the

old Eureka Dead Horse group of claims at Tuolumne, which has not been worked for sixty years. The Class was glad to hear from Jim and learn that his health is back to normal again; we are all looking forward to seeing him on his next trip east. His mailing address is Box 228, Tuolumne, Calif. — Franklin A. Bermingham, IV, has moved from Scranton, Pa., to 55½ Main Street, Saranac Lake, N.Y. Philip R. Brown, I, has moved from Stamford, Conn., to 31 North Broadway, Akron, Ohio. Victor T. Givotovsky, I, has moved to 3925 Davis Place, Northwest, Washington, D.C.

Francis T. Coleman, XV, has moved from Teaneck, N.J., to 1301 Sussex Road, West Englewood, N.J. Francis J. Coyne, IV, has moved from Chelsea, Mich., to 37 River Street, Waltham, Mass. E. Robert Helmrich, V, has moved from Gainesville, Fla., to 3355 San Fernando Boulevard, Los Angeles, Calif. John Landy, V, is still in Wilmington, Del., but at 1704 North Rodney Street. Leonard A. Richardson, XIII, is now with McCall Brothers, Ltd., 224 Adelaide Street, London, Ontario, Canada. Timothy E. Shea, VI, now resides at 245 Springfield Avenue, Rutherford, N.J. Dr. Marshall C. Balfour, VII, is at 115 Cathay Mansions, Shanghai, China. — We should appreciate learning of the whereabouts of Anthony J. Gallagher. The last address we had was 111 Union Avenue, Framingham, Mass.

Your Secretary has heard from George R. Bond, Jr., 127 West Broad Street, Paulsboro, N.J. Bond states that he is glad to get some news of '19 in *The Review* again as he seldom hears from any of the fellows. He is married and has two sons and two daughters. His hobbies are stamps, photography, and mineralogy. He usually gets to New England in August for his vacation. — Jim Strobbridge writes that in 1919 he took the regular army exams at the Institute, was commissioned second lieutenant, came out as a captain of cavalry, and now is a major in the Engineering Reserve Corps. He went to France but saw no action, wound up in Poland as a supply officer of the Polish Typhus Relief Expedition, returned to the United States, resigned his commission, and then went to Antwerp to work for the Polish Government. He returned in 1920. He then went to work for Strobbridge Lithographing Company in Cincinnati and has been in New York for the past eight years in charge of New York sales. Jim is married, but has no children.

Arnold Staubach writes from 3406 Windsor Road, Austin, Texas, that his state is so far from the Charles River that M.I.T. men are a rarity and a curiosity. Arnold has been in Austin since 1933 as a designing engineer with the state highway department. He now travels a good deal, is married, and has no children. — John Stevens writes from Wisconsin: "I am still in the pump and paper industry, but out here in the sticks I don't see many of the old gang very often. Larry Riegel and Russ Savage were here recently, and I had a nice visit with both of them. Am looking forward to an opportunity to see

1919 Continued

you and the boys again in the not too distant future. We have a boy, eight, and a girl, five."

Nelson A. Bond, XI, works with American Telephone and Telegraph Company, 32 Sixth Avenue, New York, N.Y., and resides in Tarrytown, N.Y. Huron D. Corthell, I, has moved from Mill Valley, Calif., to 5016 Sixth Avenue, Tacoma, Wash. Charles W. Hyde has moved from New York City to 2909 Mapleshade Road, Ardmore, Pa. Victor N. Samoyloff, III, has moved from New York City and is now with the Korff Lumber Company, Millville, N.J. William H. Bassett, Jr., is with the Anaconda Wire and Cable Company as chief metallurgist and now resides at 4 Claremont Road, Scarsdale, N.Y.

Arklay S. Richards called at the office in July and had an enjoyable visit with your Secretary. He is doing very well with a company of his own, handling thermocouples and accessories, located at 26 Parker Street, Newton Centre, Mass. Arklay also forwarded some correspondence from Kuang-Piao Hu, West China Development Corporation, 15 St. George's Building, Chater Road, Hongkong. Hu writes: "Since the Mukden affair I have turned my attention to the southwest of China and organized the West China Development Corporation for the purpose of promoting and building new enterprises which are so essential to our country." He has promoted the Chungking Power Company, Chungking Water Works, Szechuen Cement Company, Hua Hsin Engineering Works, China Radio Corporation, China Industrial Company, and others. He adds: "It is really a romance to narrate all that I was fortunate enough to be able to do during the years since I have come back." The Class would be very much interested in having more details from Hu in his next letter. He is married and has one son.

Daniel C. Hall, X, is at 535 Park Avenue, Towson, Md. Dan has written to bring his history up to date. He joined the Du Pont organization in Wilmington in 1927 and left it in January, 1939, accepting a position as superintendent of a Glidden lithopane plant at St. Helena (Baltimore), Md. Dan's older daughter, Bertha, was graduated from a local high school and entered Western Maryland College this fall. William is now a freshman at the local high school, and the third child, Edith, is five years old. He states: "While with Du Pont, I collaborated in the development of a new titanium *blanc fixe* pigment, 'T Bar,' and started and operated the plant until I severed my affiliations with the company over a year ago." Don would like to learn of the whereabouts of some of his old high school boys who were in his Class at M.I.T. — namely, Leo Kelley, VI, Russell Smith, XI, and James Moir, VI. Any '19 men visiting in Baltimore are always welcome.

Radford W. Rigsby, XV, resides at 1200 16th Street, Northwest, Washington, D.C. Charles H. Taverner '18 phoned me the other day and has written me concerning his K-Master Steam Traps.

Taverner is vice-president and general manager of Kaye and McDonald Inc., 94 Franklin Avenue, West Orange, N.J. He resides in Connecticut and is doing well with his business, with sales 50 per cent ahead of last year's. — Alex Wiren wrote that he was disappointed with the small showing of '19 men at Dr. Compton's dinner. Alex' office address is 393 Seventh Avenue, New York City, and his residence is 55 West Islip Road, Babylon, L.I. — Walter T. Hall and Harold C. Moberg are with E. B. Badger and Sons Company in Boston. Louis J. Grayson attended a spring meeting of the Washington Society of the M.I.T.

Al O'Donnell and Pierre Blouke were also present. — Laurence M. Dalton attends the Technology Club of Milwaukee meetings. — EUGENE R. SMOLEY, Secretary, The Lummus Company, 420 Lexington Avenue, New York, N.Y. GEORGE W. MCCREERY, Assistant Secretary, 43 Rosalie Street, Newton Centre, Mass.

1920

Our great twentieth reunion, held last June, is pretty cold potatoes to talk about now. Apologies for not being able to tell you about it are not due from me but from those who publish The Review, with their fearful and wonderful efficiency system of closing the July issue just before the class reunions are held. I presume it is part of that marvelous system which necessitates constant cautioning of Class Secretaries to make their notes as small as possible. Even at this late date it is wholly unnecessary to remind those who were at the reunion what a thoroughly enjoyable and successful affair it was, thanks in great measure to the good work of Pete Lavedan and to the way in which both the Bostonians and New Yorkers turned out and stayed through. To those who weren't there, it seems beyond the descriptive powers of your feeble Secretary to capture for you the glowing spirit of reunion or to make you visualize such highlights as the combination golf and wading; Freddie Britton's poker playing; the Indian rope trick as performed by Jim Downey with a necktie furnished by Ken Clark, who stole it from your long-suffering Secretary; and last, but not least, the arrival of classmates Florence and Dorothea. — I know I won't have to urge anyone who attended to be on deck for the big twenty-fifth in 1945, but to those who were unfortunate enough to be absent, I can say only that we'll do our best to make the twenty-fifth as good as the twentieth.

Our social high spot of the year is the announcement of the engagement of Ev Freeman to Marion Martin Baker, a graduate of the Ethel Walker School, Sarah Lawrence College, and the Child Education Foundation in New York, and a member of the Junior League of Providence. Congratulations of the Class to you, Ev. — Larry Burnham, whom we missed at reunion, has moved from Waretown to Kingston, Mass. Hank Erickson has left New York for El Paso, Texas. Bill Dewey is in Auburn, N.Y., at 6 South Marvine Avenue. Al Wason is back from

North Carolina and is now at 16 Spruce Street, Dedham. Fritz Boley is in Michigan City, Ind. Ki Chun is still in Shanghai with the Universal Investment Company, Ltd. If he sees this, I'd be mighty pleased if he'd write me.

Here are excerpts from another keenly interesting letter from K. B. White, who, you will be relieved to know, succeeded in getting out of Paris and back to the States: "I am reporting in this time from New York, where I am installed as a consulting management engineer, helping American manufacturing concerns expand and organize to meet the defense program. After doing this type of work for the past eighteen months under actual war conditions in Scotland, England, and France, I am afraid I know more about the troubles that lie ahead than do some of the other fellows. My office is at 330 West 42d Street, and I am living in Morrisville, Pa., for the time being. I hardly expected to be writing so soon again. When last I wrote, although it was from France and only a few days before the Germans entered Paris, I was quite convinced that I should continue to spend the rest of the war commuting between Glasgow and Paris, working on armament production. When France folded up all of a sudden and it became clear that the United States would have to participate more and more in the fracas, my wife and I decided that we had better believe that the *Washington* was really making its last trip and not doing another Sarah Bernhardt. In fact, we suspected so little of what happened we left a car near St. Malo, so that it would be convenient when we came back. We took the boat to Jersey, spent a pleasant day on the island, and continued by the night boat to Southampton, just as though nothing was up.

"Even now it is hard to realize it is all over, and we still look up apprehensively each time an airplane goes overhead and start for the cellar whenever we hear a siren. Although we left as travelers, we were in and about the stream of refugees escaping from the first German breakthrough. They came in automobiles and it was very much like the crowd leaving a football game — car followed car about ten feet apart, moving slowly. The difference was that this exodus lasted day after day and night after night and that every car was piled high with mattresses and blankets. It seems to be the fashion at the moment to launder soiled French linen in the American press. There is another side to the picture, however, and much of what is being published represents the paying off of old scores by people who got away. The spirit of the French and Belgian refugees was wonderful. All the stories which you read in the newspapers about the bombing, the machine gunning, and the tank attacks unfortunately were true; yet there was no evidence anywhere of despondency or despair. The refugees were not even bitter, but spoke of reconstruction. Psychologists tell us a lot about what this experience will do to children. My observation was that as far as they were concerned if one parent was along, the

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whole thing was just another picnic. The pets, the cats and dogs, seemed to be the most terror stricken.

"Another impressive thing to one who lives in a country where charities are organized and administered by all sorts of societies, was the way in which the French met this problem. They have almost no organizations like our women's societies; yet as the stream of refugees arrived in town, everyone — including the shopkeepers — just gave everything they had to them. In the little Brittany town where we were, one of the two hotels completely gave up commercial business and the owner and his family and staff devoted themselves to caring for the strangers at their gates day after day and night after night with no thought of reward of any sort. I find a lot of people who can tell you just why and how it all happened, but to one who was on the spot and more or less on the inside, it remains as much of a mystery as ever. Now that I am back in the New York-Philadelphia area, I hope that I shall manage to pick up contact again with some of the old gang as time goes on." — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

June of next year marks our twentieth anniversary. As now planned, the tremendous twentieth will take place on June 6, 7, and 8, ending with Alumni Day on June 9 at Cambridge. The place for our celebration has been selected, and the program is under way. Contact men are needed in all centers to act as liaisons for the local brothers. Will you volunteer to help? — Much has happened since we left off here, including the first of the annual Alumni Fund appeals. We want to thank all of you for responding as well as for the many fine letters you have sent in. Please keep up the much appreciated habit of dropping us a line, be it in post card or letter. — Our narrative goes back to June 3, Alumni Day at Technology. It was the usual complete success we have come to expect: weather ideal, crowd large, program, exhibits, and so on, superlative. Among those of the Class who were present were Elly Adams, Bill Barker, Cac Clarke, Josh Crosby, Fritz Ferdinand, Paul Hanson, Vic Homerberg, Ed Howard, Chick Kurth, Charlie MacKinnon, Gus and Mrs. Munning, Warrie Norton, Larcom Randall, Bill Ready, Slide Rule, Ray St. Laurent, and Johnny Sherman.

Robert E. Waterman, X, writes that he has left the Bell Telephone Laboratories and is now with the Research Corporation, 405 Lexington Avenue, New York. Bob also announces the arrival of Mary Elizabeth Waterman on April 30. — Herman Kiaer, XV, son of George Kiaer of Oslo, Norway, and the late Mrs. Kiaer, was married on June 10 to Mrs. Alice Damrosch Wolfe, daughter of Dr. Walter Damrosch, conductor and composer, and Mrs. Damrosch. Mrs. Kiaer is a member of the Colony Club, a former President of the New York Junior League, and is chairman of the Women's Com-

mittee of the National Ski Association. Twice she has been the recipient of the golden ski at Davos, Switzerland, emblematic of skiing supremacy for women. Herm, who has been living in New York since 1930, has been identified with the pulp and paper industry here and in Scandinavia since graduation from the Institute. He was manager of the Norwegian-American Chamber of Commerce and deputy high commissioner for Norway to the New York World's Fair in 1939. He is now vice-president of the Horton-Brown Corporation, 149 Broadway, New York City. Mr. and Mrs. Kiaer make their home at 170 East 71st Street.

Laurens M. Hamilton, XV, of Palm Beach, Fla., son of Mrs. Morgan Hamilton and Mr. William Pierson Hamilton, was married on July 24 to Mrs. Eva Stewart Spillman, daughter of Percy H. Stewart, former Representative in Congress from New Jersey, and the late Mrs. Stewart of Plainfield, N.J., at The Plains, Va. Laurens left the Institute to enter the Army in 1918, serving abroad with various military missions, notably the Inter-Allied Military Mission to Hungary. Later he resigned from the Army and went to France, where he became an adviser on questions of international law and taxation. Returning to this country in 1929, he was appointed agent of the foreign commerce bureau of the United States Department of Commerce and represented the divisions of commercial law and foreign taxation of that bureau until 1932, when he resigned to enter New York state politics. He was elected to the assembly from Rockland County in 1933 and served until 1937. He is a member of the Metropolitan Club of New York, the Fort Orange Club, Albany, the Tuxedo Club, and the National Golf Links of America. He is also a member of the Seminole Golf, the Everglades, and the Bath and Tennis clubs of Palm Beach, and of the National Council of the Boy Scouts of America. Mr. and Mrs. Hamilton will make their home in Palm Beach. — The passing of Herman LeMont Schmidt, XV, on July 27 at Washington, Conn., will come as a severe shock to his many friends. No further details have been received. Sincerest sympathy is extended to Mrs. Schmidt on behalf of the Class.

During the summer we saw a few of the Class, the first of whom was Stuie Nixon, XV, who heads sales and engineering for Sealed Power Corporation of Muskegon Heights, Mich. Stuie was visiting Harm Deal '20, who lives a few blocks from us in Glen Ridge, N.J. (as does Phil Coffin, VI-A), and we spent the evening taking a look-see-listen at and to Harm's excellent R.C.A. television receiver in action, and then listening to a really good discussion by Stuie of automobile-operating problems and their solutions to date. The evening ended on a note of wishful thinking that Jack Kendall, Munnie Hawes, Ray St. Laurent, and others were nearer by. — G. Howard LeFevre, III, sales engineer for the United States Smelting, Refining and Mining Company, 57 Wil-

liam Street, New York, visited us at the office for lunch and later dropped in at home during a trip across Jersey. Moose is living at the St. George in Brooklyn, is still unmarried, and says he will be very much on deck at our twentieth. He reports that Larry Conant, XV, has left the Brookings Institution and is with the Social Security Board in Washington. Also that Don McGuire, VI, is no longer in Boston but can be reached at 14 West Prospect Avenue, Middletown, N.Y.

Saw John G. Lee, I, in Hartford, Conn., where he is busy to the nth degree on the defense program as assistant director of research for Pratt and Whitney division of United Aircraft. Web Frymoyer, II, is another busy man these days in his capacity as general superintendent of the Foxboro Company, Foxboro, Mass. Missed seeing Munnie Hawes, X, boss politician of Sea Girt, N.J., on a trip to the shore, but partner Jimmie McAfee of the real estate firm of Hawes and McAfee, Inc., promises to shoo Munnie away for our reunion regardless of mere business, Kiwanis, and Jersey politics. — Herbert V. Thaden, II, reports his removal from Pittsburgh to become associated with the Hayes Manufacturing Corporation, Grand Rapids, Mich. Stuie Nixon please note. Herb is living at 600 Locust Street, Southeast, East Grand Rapids, Mich. — Samuel T. Drew, I, has returned from Caracas, Venezuela, and can be reached at 108 South Central Avenue, Wollaston, Mass. — Announcement has been made of the promotion to captain for Herbert B. Loper, I, United States Army. Loper is stationed at the Office of the Chief of Engineers, Washington, D.C. — It is now Major Harold O. Bixby, II, Signal Corps, United States Army, since his return from Manila. Phoned Bix at the War Department, Munitions Building, Washington, but didn't get away from a business meeting in time to see him. This is a gentle reminder of his promise to write.

The many changes of address of the summer include the following: Dayton T. Brown, II, 104 Chase Road, Manhasset, L.I., N.Y.; Thomas B. Card, VI, Masonic Building, 558 Pleasant Street, New Bedford, Mass.; Romana O. Duyos, X, Licorera Company of Cuba S.A., 102 Basarrate Street, Havana, Cuba; Ralph R. Evans, X, 22 Skahan Road, Belmont, Mass.; Glenn E. Fargo, IX-B, 2976 Staunton Road, Huntington, W.Va.; Lt. Col. Thomas D. Finley, I, R.O.T.C., University of Maryland, College Park, Md.; Max Goldberg, VI, 36 Elizabeth Avenue, Newark, N.J.; Geoffrey J. Greenfield, X-A, 44 Grantham Avenue, West Harthpool, Durham County, England; Alexander D. Harvey, III, 819 East Forest Avenue, Neenah, Wis.; Rev. William F. Hastings, VI, 39 South Street, Middlebury, Vt.; C. Harry R. Johnson, II, 625 Borgess Avenue, Monroe, Mich. New locations have also been received for Hyman Levensohn, XV, Room 609, Union Savings Bank Building, 216 Tremont Street, Boston; Ralph R. Lewis, XV, 10 Ronan Street, Dorchester, Mass.;

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Robert F. Miller, XV, Stevenson, Jordan and Harrison, 19 West 44th Street, New York, N.Y.; Lieutenant Colonel Raymond G. Moses, I, Fort Belvoir, Va.; Norman F. Patton, IX-B, 455 West 34th Street, New York, N.Y.; Ernest Pauli, XV, 512 Fifth Avenue, New York, N.Y.; Victor S. Phaneuf, II, 308 Main Street, Nashua, N.H.; Samuel Sharlach, X, 750 Grand Concourse, New York, N.Y.; John E. Shaw, III, 1301 Chelton Way, South Pasadena, Calif.; Sidney Turkel, V, Savoy Hotel, Miami, Fla.; Clarence S. Wentworth, II, 21 Limerock Street, Camden, Maine. — Celebrate either Thanksgiving with a note to your Secretaries. — **RAYMOND A. ST. LAURENT**, Secretary, Rogers Paper Manufacturing Company, Manchester, Conn. **CAROLE A. CLARKE**, Assistant Secretary, International Telephone Development Company, Inc., 137 Varick Street, New York, N.Y.

1922

Mark on your calendar Monday, December 2, the date of the class dinner in New York. It will be held at the Technology Club, 24 East 39th Street, with cocktails at 6:00 P.M. This dinner has become one of the highlights of the winter season and 100 or more are expected to attend. With Bill Mueser running the affair, with George Dandrow President of the Technology Club, and with the expected attendance of cherubic Lobby Lobdell, an enjoyable evening is fully assured. Out-of-town members are not only welcome but are urged to arrange their business trips so that they will be in New York at that time. Notify W. H. Mueser at Moran, Proctor, Freeman, and Mueser, 420 Lexington Avenue, New York, N.Y., or the Secretary as far in advance as possible.

The worthy members of our Class may have enlarging waistlines and receding hairlines, and it may be a sign of old age to enjoy talking over old times, but I think all who attended our class activity at Alumni Day last June agreed that they had a swell time for their money and effort. On Sunday, the day before Alumni Day, the Kenmore Hotel kindly put at our disposal a suite of rooms where we could sit, sip, and gossip. Twenty-three men showed up at the class headquarters and for dinner Sunday night. Yard Chittick arranged for golf at the Belmont Country Club, of whose facilities ten athletic souls took advantage. The same number were present at the symposium or luncheon at the Institute on Monday, and twenty-four attended the banquet and the cocktail hour preceding in Whit Ferguson's room at the Statler. Chittick tabulates that the total cost, including the share of the expenses at the Kenmore, the dinner Sunday night, golf, and the \$5.00 reunion fee amounted to \$14.40 a man, and we had enough left over to pay for the post card announcement which we sent out. Try and get as much for your money elsewhere! The long-distance travel record was shared by Al Browning and Bill Bainbridge, both from Chicago. Others present were, Parke D. Appel, Harold O. Berry, Edward L. Bowles, J.

Frederick Brittain, Walter J. Croft, Jr., James Duane, Earl H. Eacker, Edward C. Fales, Warren T. Ferguson, Lawrence M. Gentleman, G. Dewey Godard, John M. Goodnow, Joseph Greenblatt, Clayton D. Grover, E. Randolph Haigh, David H. Harris, John F. Hennessy, Robert N. McClellan, Harris B. McIntyre, William K. MacMahon, George G. Marvin, Theodore T. Miller, William H. Mueser, August P. Munning, C. Randolph Myer, Donald S. Phelps, Winthrop F. Potter, Archibald F. Robertson, William W. Russell, Roscoe E. Sherbrooke, Wilfrid M. Thomson, A. Robert Tonton, and John L. Vaupel. — **CLAYTON D. GROVER**, Secretary, Whitehead Metal Products Company, Inc., 303 West Tenth Street, New York, N.Y. **C. YARDLEY CHITTICK**, Assistant Secretary, 77 Franklin Street, Boston, Mass.

1923

I am pleased to report that Jack Keck is recovering from an operation in June and the immediate effects of a bad fall on icy streets last winter. The accident left him deaf, so he reports that he is studying lip reading and expects to get by without too much inconvenience. Jack's letters show that he has not let his misfortune impair his enthusiasm in any way. — Dr. Compton announced at the Alumni Day dinner that the Institute gratefully accepted the 1923 gift of a garden to finish the Alumni Swimming Pool. The garden, incidentally, is really something. The swimming pools (two of them) are lighted by one great window, which covers practically the entire south side of the building, facing the river. The garden, with a walled enclosure so that persons can sun-bathe there, occupies the most prominent part of the building layout, the space directly in front of the huge window. Most of those at the Alumni Day dinner had visited the pool in the afternoon, so that when the gift was announced by Dr. Compton, there was heavy applause. They had seen the garden in construction and were able to appreciate the substantial and important character of the donation.

The Class again had the distinction of an alumnus making the longest trip to Alumni Day. Jose Carlos Bertino, XIII, was here from Buenos Aires. Bertino is a naval engineer and commander in the Argentine Navy. He had been saving furloughs for several years and was able to get in a four months' stay in this country. He renewed old friendships, particularly among the teaching staff and 1923 Alumni of Course XIII. — Numerous members of the old guard and a few newcomers took in various Alumni Day functions this year: J. E. Burchard, Charlie Burke, Hugh Ferguson, Bill Greenough, Louis Greenblatt, Don Height, George Johnson, J. J. Murphy, Miles Pennybacker, B. E. Proctor, G. A. Rowen, E. C. Rue, H. F. Russell, Philip Schwartz, Dave Skinner, Dale Washburn, E. W. Willis, and C. F. Woodbury.

John W. Barrows, XV, died last December. He was with the McFarlin Clothing Company of Rochester, N.Y. —

We also have a report that Mason D. Harris, XIII-A, of Fitchburg has been totally disabled by a motor accident. — Walter E. Richards was retired from the Army Air Corps a year ago, joining the United Aircraft Corporation at East Hartford. But this month I have a notice of an address change from him which places him at the United States Army Recruiting Station, Springfield, Mass. — Earl D. Brown is now plant superintendent of Durkee Famous Foods plant at Elmhurst, Long Island. His home address is 41 Essex Road, Great Neck, N.Y. — Ragnar D. Naess has gone into the investment counsel business for himself: Naess and Cummings, 63 Wall Street, New York.

Ernest E. Fairbanks has been appointed associate mineralogist with the United States Bureau of Mines, Eastern Experimental Station, College Park, Md. Fairbanks was formerly mineralogist at the Rare and Precious Metals Experiment Station at Reno, Nev. Until recently he was with Celo Mines. He has expressed a wish to get in touch with old friends in the East. — Frederick T. Entwistle, writing from Richmond, Va., says he is still with Du Pont, making rayon. He reports having run into Bob Kane, who now also lives in Richmond. — **HORATIO L. BOND**, Secretary, 457 Washington Street, Braintree, Mass., **JOHN M. KECK**, Assistant Secretary, 441 Mount Prospect Street, Newark, N.J.

1924

The death of Bill Coleman, who was killed in an oil explosion at the Congoleum-Nairn plant in Kearny, N.J., early in the summer, was a great loss to the Class and to his family. Many members of the M.I.T. Club of Northern New Jersey, of which Bill had been president, attended funeral services in Bloomfield. — Bill Robinson, in the East on a flying trip over Labor Day, occasioned a small luncheon at the Graduate House on September 3. Present, in addition to the Secretary, were George Knight, Nip Marsh, and Chick Kane, as well as Ralph Jope '28, and Charlie Locke '96 to represent the Alumni Association.

The appointment of Baird Snyder as deputy administrator of the wage and hour division of the Department of Labor was announced in June. He was formerly with the Resettlement Board. Bill Hand, division manager of the Southern California Gas Company, was recently named by the San Bernardino *Sun* as one of the "people you should know." He has one daughter, and is a vice-president of the San Bernardino Chamber of Commerce. — Bob Simonds, said the New York *Herald Tribune*, was married in June to Elise McMahon of Ossining, N.Y. They are now living in New York and should send us their address. — Dave Lasser, former President of the Workers Alliance of America, has been quoted in a series of articles in the New York *Post* as resigning from his berth because of communistic domination of the organization which he established. — The Worcester *Telegram* reported in August that

1924 Continued

Sam Silverman, formerly a teacher of advanced mathematics in the local high schools, had received a civil service appointment as a radio engineer at Fort Sam Houston, Texas. He had recently served as machine design engineer at the Heald Machine Company. — FRANCIS A. BARRETT, *General Secretary*, 50 Oliver Street, Boston, Mass.

1925

As predicted, our fifteenth reunion took place from May 31 to June 2, at the Corinthian Yacht Club at Marblehead, Mass. The attendance grew from thirteen on Friday night to forty-one at the banquet on Saturday evening. At the banquet the following officers were elected (or re-elected): President, Tom Price of the Hammermill Paper Company, Erie, Pa.; Vice-President, Joe Russell of the General Electric Company, plastics division, Chicago; second Vice-President, Chink Drew of Schrader Valve at New York; Secretary-Treasurer, Hollis Ware of Lever Brothers, Cambridge; Assistant Secretary, Doc Foster of the M.I.T.; second Assistant Secretary, Avery Stanton of Mason-Neilan, Boston. — After the formalities were concluded, we proceeded to "pass the baton" around the table, each telling something about what he had been doing in the past few years, the number of children, if any, and of meetings with other members of the Class. George MacDuff, who had come from Jamaica in the British West Indies, was farthest from home. He told of his work as manager of the Jamaica Public Service Company, Ltd., and mentioned the bustle of wartime activities. He admitted that he was still single and wouldn't even promise to turn up married in 1945.

Art Ross of the Army Air Corps, who is stationed in Washington, gave an interesting summary of his career as a military aviator. He mentioned his frequent contacts with Frank Klein, who was unable to come to the reunion. Chet, he said, was in Washington at the time and would have come up with him, but the only plane available was a single-place ship, so Chet had to stay behind. Chet is in the air service branch of the Officers Reserve Corps. Art spent several years at Wright Field and was transferred to Washington with General Brett and put in charge of equipment co-ordination. — Jack Dunbar was the only farmer present. He and his wife (they have no children) farm a small place in Arlington, Mass. — Myron Doucette is on the engineering side of the same firm of which Chink Drew is sales manager; it would appear from Myron's comments that they carry on a species of feud, Chink holding that Myron's department can't design anything worth selling, and Myron, that Chink's salesmen couldn't sell anything no matter how well it was designed. However, it all seems to work out all right under the guidance of this '25 team. Myron is married, has one daughter, and is active in the Officers Reserve Corps as well as being a member of the local school board.

Jack Turnbull came to bat with the suggestion that the members of the Class living in the vicinity of Boston form a local '25 club, to hold meetings two or three times a year and serve as a committee to get the reunion rolling every five years. This suggestion was heartily seconded, and Bob Learoyd was elected chairman of the group after the general meeting broke up. Any who are interested in this idea can get in touch with Bob at 13 Oak Street, Danvers, Mass., or at his place of business, 50 State Street, Boston.

Others present were: Arnold Bailey, Rusty Blair, Bill Brown, Harrison Browning, Hank Cunningham, Fred Dolan, Scott Emerson, Connie Enright, Len Gregory, Bob Hodson, Jim Howard, Bob Huthsteiner, Don Jones, Stan Lane, Joe McCarthy, Al MacCleery, Frank McGinnis, Henry McKenna, Art MacLean, Gray Marshall, Ron Mitchell, Willard Morgan, Frank Mulcahy, Ed Murphy, Fred Rice, Ted Robbins, Jack Rountree, Jake Squire, and Westy Westland. All agreed that what we lacked in numbers we made up in enthusiasm and vociferousness, although the scheduling of a sea-scout dance on our first evening delayed the real start for a few hours. — Anyone wanting to get in touch with any of the class members mentioned in this account and not having a "Register of Former Students" at hand, may obtain their addresses by writing to the Secretary.

Later in the summer I made two trips to Lever Brothers' Baltimore plant on company business, and while there got in touch with Frank Klein and paid a visit to Ralph Ilsley in Washington. Frank's new home in Towson, just north of Baltimore, is beautifully located in a grove of oaks and evergreens. In fact, he is troubled with an embarrassment of riches as far as the trees are concerned, for in many places they grow so closely together that they interfere with one another's growth. However, Frank's wife, Connie, assures me that she will see to it that he cuts down the excess, thus assuring an ample supply of firewood for at least the first winter. The Kleins have two charming daughters, whose arrival was duly mentioned in these notes; they are certainly a lively pair, as I found during my two evenings at Frank's home. — Ralph Ilsley and his wife Sally (Wentworth) live at 4400 Davenport Street, Northwest, Washington, D.C., where Ralph is connected with the bituminous coal commission in the Department of the Interior. They, too, have a new home with a large flower garden, the cultivation of which constitutes Ralph's principal hobby. Although he usually stays in the Washington office, Ralph recently made a trip to the West Coast, mostly by air. Evidently none of our classmates is a coal dealer in that region, for Ralph reports that he saw none on the entire trip.

We learn that Glen Bateman, who is a bomber pilot with the South African Air Force, had his gas tank shot full of holes while on a flight in the Egyptian theater, and was lucky to be able to cover the 300

miles back to his base. While the report is not complete, it is probable that reserve fuel tanks made it possible for him to return safely. This information was furnished by Edward L. Bateman, Box 1671, Johannesburg, South Africa, and forwarded by H. B. Kane '24, Director of the Alumni Fund. He received it from our Class Agent of the fund, Avery Stanton. In the same letter from Kane is a quotation from a letter by Frank Fricker: "I saw Ralph Gow on several occasions when he visited Detroit three or four years ago. As you [Stanton] are in touch with him, you are familiar with his progress in the Norton Company. Apparently he is fulfilling our highest expectations. I have been active in the local M.I.T. group and am widely acquainted among the Alumni in this district. There are not many members of the Class in Detroit, however, and as we grow older it seems that we have less time available for attending alumni meetings. Chink Drew probably told you that I am with the Ethyl Gasoline Corporation Research Laboratories here in Detroit. I am in my fourteenth year of service with the company and find my present job, handling the business and nontechnical affairs of this department, quite enjoyable. We shall start the construction of a new research laboratories plant on the outskirts of Detroit within the next month or so, and my activities will be quite frenzied during the next year or two, I am quite sure. My family now consists of one wife, two boys, two girls, one English bulldog, and one tomcat. We lead a busy life and think we're enjoying ourselves a great deal. We have just moved into a new house at Franklin, Mich., a few miles from Detroit, and are trying to get settled."

From the *Boston Traveler* of June 24: "Mr. and Mrs. George H. Sidebottom, of Reading announce the engagement of their daughter, Dorothy Elizabeth, to Percy E. Anderson. . . . Dr. Sidebottom was graduated from Reading High School, class of 1923, and from Mass. College of Osteopathy in 1927." Percy was a student in Course VI-A and is now employed by the firm of Francis Brothers in Reading. — From Assistant Secretary Doc Foster comes the following information: "In addition to MacDuff, Cunningham, Enwright, Howard, Dunbar, Rice, Russell, and myself, who also attended the class reunion, Sam Caldwell and Bill Steinwedell were present at the Alumni Day banquet. The latter was unable to reach Boston in time to meet with the Class at Marblehead." — HOLLIS F. WARE, *General Secretary*, 3 Aquavia Road, Medford, Mass. F. LEROY FOSTER, *Assistant Secretary*, Room 6-202, M.I.T., Cambridge, Mass.

1926

On Alumni Day last June three of our wandering classmates returned from far places. E. N. Roberts and Henry Rickard were here on leave from their work in South America. Rickard is with the United Shoe Machinery Company and Roberts is with the Andes Copper Mining

1926 Continued

Company. The third visitor was Dave Shepard, who is on leave of absence from his job with the Standard Oil Development Company in London. — On August 8 Mr. and Mrs. Roberts announced the birth of a son, Edward Carnahan, at the French Hospital in New York City. — Other visitors to the Institute since my last report include Bob Mattson, who is trainmaster for the Northern Pacific Railway Company, with headquarters at Pasco, Wash., and Arthur Baker, research chemist for the Hercules Powder Company.

Announcement was made on July 1 that Bob Dean had been admitted to the Boston architectural firm of Perry, Shaw and Hepburn. Bob continues as a part-time member of the staff in the Institute's School of Architecture, and he now holds the rank of captain in the National Guard. — Arthur F. Johnson, after returning from Australia where he was engaged in mining activities, in August entered the employ of the Shenandoah-Dives Mining Company at Silverton, Colo. — Let no one forget that this coming June brings our fifteenth reunion. — JAMES R. KILLIAN, JR., *General Secretary*, Room 3-208, M.I.T., Cambridge, Mass.

1927

Richard E. Harrison is living in Cochituate, Mass., and is with the Metropolitan District Water Supply Commission at Natick. Steam is resident engineer on the high-level distributing reservoir now being built in Weston and has the rating of assistant civil engineer. He has been with the commission since 1930 and has been connected with all phases of its work from tunnels to dams to roads to reservoirs and back again. He was married in 1934 to Kathryn Prior of Shrewsbury and is a ten-meter amateur radio fan. He has also given us a little bridge advice which I have permission to quote. "When playing contract, count your aces, kings, queens, and jacks, divide by two and you will have your honor count. Try it; you will be surprised." Your Secretary will probably try it but not when the stakes are very high. The Gordon Thomas' visited Steam and family during the week before Labor Day, when the Thomas family was here from Paducah, Ky., where Gordon works for the Tennessee Valley Authority. Jerry Spurr runs the soil lab for the Metropolitan District Commission and is living in Wellesley.

Ralph Petersen, who lives at 144-93 41st Avenue, Flushing, N.Y., is connected with R.C.A. Manufacturing Company. He was a television service engineer at the New York World's Fair. We should have known this sooner so that the '27 visitors to the Fair could have really been mugged. — Dudley Young answers from Evanston, Ill., having spent the last thirteen years between New York and Chicago. He is a district engineer for the Anaconda Wire and Cable Company. Dud married Marjory Glassco of Winnipeg. No other dope has been forthcoming except the question, "Where are Pop Wright and

Toad Cottrell?" — Charlie Bartlett is living in Portland, Maine, and has been there for the past eleven years. He divides his time between C. A. Bartlett, Inc., oil dealers, of which he is president, and the practice of law where he is an attorney. In fact, as he puts it, he first sells the heating oils and then sues the customers if they don't pay. Charlie has been married for eleven years. He seems quite sold on his setup: "For complete happiness and a sense of economic security, get off the pay roll and get in business for yourself." An article on "The Effect of Science upon the Law" won first prize for Charlie in the third annual Nathan Burkan Memorial Competition sponsored by the American Society of Composers, Authors, and Publishers. With such literary ability perhaps he can give us a few tips on how to get into business for oneself. I am sure that more than a few of the Class would have an abnormal interest in such a bona fide suggestion. Charlie says: "Lew Baker dropped in to see me a year or so ago on a vacation in Maine. Same genial Lew who led all the freshman riots. Would like to hear from others when they visit vacationland."

The first information about Ted Ordman comes from a newspaper clipping of May 30, telling of his marriage on May 29 to Kathryn Alling of Brooklyn. Mrs. Ordman was on the staff of the Nitchie School of Lip Reading, Manhattan, before her marriage. Some of the Class know about the accident which came to Ted in 1932. It is best described by himself: "I became totally deaf in 1932 as a result of a serious illness. I have found that Tech's intensive preparation helped put me in the class of the millions who, while deaf, are definitely not dumb. Deafness has proved an asset in many ways and has not materially impeded my progress in business." Ted is connected with Kenyon and Kenyon, patent lawyers, at 165 Broadway, New York, and participates in the preparation and prosecution of applications for patents, trade-marks, copyrights, and other phases of patent law practice. He has become very much interested in the problems of the deaf, and at one of our New York meetings last year spoke to the crowd. He has written a number of articles on this subject, which include "An Eye Story About Ears," "Minus Ears but Plus a Job," and two poems, "A Lip Reader's Prayer," and an "Intermezzo for an Unfinished Symphony." Having seen Ted, I can assure you his sense of humor has not been impaired, and from what he told us he is quite amused by the occasional subway conversations that the ear cannot hear but which the eye can tell to a trained observer. Such observations would offer interesting reading; perhaps Ted will oblige us one of these days.

Another clipping from last spring tells of the promotion of Jack Herlihy from operations' vice-president for United Air Lines to executive vice-president in charge of operations. Jack's meteoric rise in the aviation world is rather difficult to record because of the rate at which he has moved ahead. Late as this report may

be, we nevertheless offer our congratulations for such continued success. — Other members of the Class have sent in their data, but in case the rest of you don't crash through I am holding them for the next issue.

Before long I am sure that Bob Bonnar will undertake the fall dinner, tentatively set for November 15, for the New York '27 men. This announcement will serve as reminder for out-of-town men to get in touch with us when they are in the city and for New Yorkers to make sure that they are listed so as to receive the notices. — RAYMOND F. HIBBERT, *General Secretary*, Care of Johns-Manville Corporation, 22 East 40th Street, New York, N.Y. DWIGHT C. ARNOLD, *Assistant Secretary*, Arnold-Copeland Company, Inc., 222 Summer Street, Boston, Mass.

1930

In May, Fred Huntington, XIII, took as his bride Margaret Eleanor Crosby of Upper Montclair, N.J. Fred is a naval architect with the firm of Sparkman and Stephens; Stephens is also a classmate of ours and codesigner of the last cup defender *Ranger*. — Philip Charles Ross was born in June and was responsible for the nonappearance of Irvine Ross, Jr., VI-A, at our reunion. Another son is nearly five years old. — Howie Gardner, X, hadn't such a good excuse for not showing up at Old Saybrook, since his second daughter wasn't born until late in August. Carol's sister, Ellen, is now three, and her dad is the busy head of the chemical engineering department at the University of Rochester. Our heartiest and best wishes to Fred, Irv, and Howie.

Our ten-year reunion, about which you read something in every issue of the last volume of *The Review*, attracted seventy-three classmates to the Riversea Inn at Old Saybrook, Conn., on June 1 and 2. They came from far and near, by car and train, and the chief regret most of them had was the shortness of the reunion. Reports from various sources were mostly enthusiastic, to say the least. One fellow said he'd never spent ten dollars to such good advantage, while another stated: "... It was as good a week end as I have ever had. ..." The manager of the inn told us that ours was the best reunion he had ever entertained. Perhaps that was because our total damages to inn property amounted to only \$2.50.

Several fraternity groups held minor reunions of their own, with practically full attendance of the houses. Sigma Nu and Phi Sigma Kappa had nearly every man back, and a number of the others were represented by three or four men. The golfers lost no time in teeing off in the qualifying round for match play, and Hugh Wallace, XV, was medalist with a 77. Two divisions were made for match play, with Hugh on the winning end in the finals of Class A over Yicka Herbert, V, and with Lee Thorsen, XV, taking the measure of George Lawson, VI, in Class B. Sunday morning Tom Wigglesworth, XV, conducted a tennis tournament, and when the fog cleared away we learned that Tom had defeated Bob Nelson, XVI,

1930 Continued

in the final round. Softball claimed a number of the boys, while some of them took a motorboat cruise along Long Island Sound. The banquet Saturday night was successful from all angles except the political and was followed by groups of moving pictures of our graduation and our reunion at Toy Town Tavern in 1935. Early Sunday afternoon we had a clambake on the beach more or less to wind up the official program. Tul Houston, XVII, presented Scotty Scott, VI-A, and your Secretary with gifts from the group in appreciation of their services on the reunion committee.

Jack Latham, II, revealed some interesting statistics reported on the questionnaire blanks at the time of registration on Saturday. Of chief interest to many was the average salary of \$4,000, which was \$500 more than that reported by the Harvard class of 1930. Three-fourths of our members present were married, and forty-two children were recorded, with several men boasting as many as three. Our single classmates indicated little prospect of becoming benedicts. Half of us reported that we had worked for but one firm since graduation, but 10 per cent had changed employers five times. A very large majority felt satisfied with the jobs held, and half of the men stated that part of their time was occupied in some form of community betterment. Favorite recreations range from bridge to drinking and from golf to gardening.

Dick Wilson, X, volunteered to serve as reunion photographer and took several rolls of movie film for the sake of posterity and future reunions. Groups of classmates may obtain these films for private showing by writing to Dick at 178 East Parkway, Rochester, N.Y., paying necessary postage charges. Your Secretary will be glad to handle the distribution of snapshots if those of you who took pictures will be good enough to send him your negatives, and if others interested in obtaining prints will drop a line stating their desire. — Your Secretary wishes to thank the members of the reunion committee in Greater Boston and in key cities of the East for their enthusiastic co-operation in making our tenth the success that it was.

Alumni Day found seventeen of us at the banquet in the Hotel Statler. All except two of these men had been in attendance at Old Saybrook. A number were also present at the dedication of the new swimming pool during the afternoon. Jack Jarosh, II, may well be proud of the new facilities at his disposal in developing future Technology swimming teams. — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass.

1931

The first item on the schedule this year and number one consideration for every '31 man is the ten-year reunion. Your Secretary is most anxious to get the ball rolling on this event, and we are in line to receive suggestions as to where to hold it and other details. A committee will be appointed within the next two months to make preliminary plans for the reunion

and insure its success. Here is our chance to bring back the good old days and renew the grand acquaintances that we've all but forgotten. Be sure to mention the tenth reunion to every '31 man you see. This column will harp on the subject for the rest of the year and keep you posted on developments.

Ralph Jope '28 has kindly turned over to us an excerpt from a letter, dated May 20, which he received from Sweden from Richard F. Sundstrom: "Since you wrote your letter of April 3, several things have happened here, but luckily enough our country is still out of the turmoil. Let us hope that our two countries will be able to remain so. — I have also received four Reviews which I have found very interesting. . . . When I left the Institute with a master's degree in 1932, I went home and worked for the Standard Oil Company and then spent a year and a half in France working in their new refinery at Port Jerome, halfway between Rouen and Le Havre. You may recall that I was kicked out of the United States owing to the unemployment situation; I now enjoy the distinction of having been kicked out of France, too, for the same reason. I went back to Sweden in the beginning of 1935 to work in the sales engineering department and am now sales co-ordinator for asphalt, lubricating oils, and specialty products in the Standard Oil Company's Swedish affiliate. — I have also had rather much to do with our connections in Germany, and I know the people there well. It is strange to think now that only a short time ago French, English, and Swedish Standard Oil people could meet in Hamburg and have a really good time together. Let us hope that we shall be able to meet that way again very soon.

"You probably know that David Shepard [26] has a very big job in the Standard Oil Company's European organization, with head office in London, and I have a great deal to do with him. He is in America now and will probably be in Boston one day. If you see him, please remember me. — Spring has been very late this year and today is the first really warm day of the year. My secretary across my desk objects to the last phrase since she does not consider the temperature high enough to warrant the adjective. However, I think this day must be considered a step in the right direction."

From the newspapers we learn of the wedding of Louisa F. Carter and Harold E. Duncan. The ceremony took place at the First Methodist Church, Winthrop, on June 15. Mrs. Duncan is the daughter of Silas Greenleaf Carter of Gardner. Mr. and Mrs. Duncan are residing in Plymouth. — Katherine F. Dearborn, daughter of Mr. and Mrs. LeRoy Dearborn of Greenland, N.H., and George D. Manter were married at Greenland on June 13. They are now living in Worcester, where Manter is plant engineer for the New England Telephone and Telegraph Company.

Art Demars wrote me a note telling a few things about himself, but I had to get married to make him talk. Art is with

Jackson and Moreland Company of Boston but at present is located in Allentown, Pa., where he is their steel expert. Art is not married and seems to like it. His address is 117 North West Street, Allentown, Pa. He writes that he has just received word from Carl Baker that Mr. and Mrs. Baker are celebrating the birth of a son. That makes Carl's family a girl and a boy. Carl is assistant chief engineer at Hamilton Standard Propellers and resides in Wethersfield, Conn.

Clare F. Morgan became the bride of Benjamin W. Steverman on September 28 at St. Thomas Aquinas' Church, Jamaica Plain. Mrs. Steverman is the daughter of Mrs. Morgan of Jamaica Plain and the late Dr. Daniel J. Morgan and is a graduate of Regis College, Class of '38. The Stevermans reside in Atlantic. After the wedding, announcement was made by Mrs. Morgan of the engagement of her daughter Miss Ruth H. Morgan to Frederick E. Brooks, Jr., one of the ushers. Fred is living in New Haven and is with the Worthington Pump and Machinery Company, being their representative in the New Haven area. — Don't forget the tenth reunion. Also note the address to which correspondence should be directed in the future. — BENJAMIN W. STEVERMAN, *General Secretary*, 14 Russell Street, Atlantic, Mass.

1932

We are pleased to have news of so many of our Class at the beginning of another volume of The Review. This good start is in part due to an accumulation of items from last spring and also to some letter writing by your Secretary. Henry Chapin, III, has been the best reporter of us all. After a sojourn with the research laboratory of the United States Steel Corporation, Chapin went to Southington, Conn., as metallurgist with the Peck, Stow and Wilcox Company, manufacturers of hand tools, metal forming machinery, and tinnery tools. He says it feels good to be back in New England. I quote from his letter of last spring, and from one I have just received from Southington, Conn.: "Ben Chadwick and his wife are long since the proud parents of a son, Benjamin Emerson, born in July, 1938. Ben is still with Gloom's hardware store in Marblehead, being all wrapped up in the business. I believe he is on the board of directors of the Salem Y.M.C.A., and on the side runs a little real estate business. — Wendell Bearce is plant manager of the Grangers Manufacturing Company, West Stockbridge, Mass., a company dealing in limestone products. He reports two daughters, Natalie, aged six, and Virginia, four. I hope to see him before long, since he is almost a neighbor of mine.

"Some time ago Otto C. Chapman was reported in *Mining and Metallurgy* to have been appointed superintendent of the Phosphate Recovery Corporation at Columbia, Tenn. . . .

"Arnold Keskulla is still with the Aluminum Company of America in Garwood, N. J., as plant metallurgist for the die-casting division. He was married on

May 28, 1938, to Miss Carolyn Elizabeth Windeler. She keeps him tamed at home with a swell collection of phonograph records, but when he is out you want to beware of that bowling arm of his — he'll bowl you over. — Saw Tom Hartigan some months ago. He seems to be doing well in business for himself as president and treasurer of the Mattatuck Liquor Sales Corporation. Hope to see him again shortly. He has a real happy family, including three children: Thomas, Jr., nearly five now; Maura, going on four, and Brenda, who was one in April. Tom says he had nothing to do with their being redheaded. — Still Haynes was married on October 15, 1938, to Miss Dorothy Schlesman of Allentown. He is with the New Jersey Zinc Company of Pennsylvania at Palmerton, Pa. I believe he's in their slab zinc department.

Howard Quigley, IV-A, was appointed in July to the superintendency of the Kansas State School for the Deaf at Olathe, Kansas. To the uninitiated, that means he is the number one man in charge. He went there from the principalship of the Iowa School for the Deaf, Council Bluffs, Iowa. — Margaret Dietz, who by now can probably say 'daddy' to Albert Dietz, XVII, was born on November 19, 1938. Al is at the Institute, teaching in the Department of Building Engineering and Construction and studying for a doctor's degree. Bob McCaa, VI-A, electrical engineer for the York Ice Machinery Corporation at York, Pa., announced the birth of a daughter, Marian Horton, born June 21, 1939. I hope she is nice to her brother, David, aged three. . . .

... Letters go blissfully ignored when asking questions about whereabouts. I wonder if it would help to publish some definitely erroneous comments sometime. Corrections should fly fast. — A letter from Jackman last spring indicated he was still with the United States Vanadium Corporation. He has been connected with one of their mines which produces tungsten, molybdenum, and copper at an elevation of 11,000 feet. He had recently been transferred to a pilot refinery at Laws, Calif., where he was working seven days a week. He said pleasure out there is hunting in the fall, skiing in the winter, and fishing all summer. He also indicated that he was still with that few in number but select group of bachelors. He wound up with a good word (as if it were needed) for California in spite of Hollywood, Okies, and earthquakes.

"Via the grapevine, I hear Denny Curtin is still with the Youngstown Sheet and Tube Company, headquarters in Youngstown, and is metallurgist in the bar and wire division. There is a difference of opinion as to whether or not he is married. We can only say we hope he knows, and maybe in time he will tell us."

Our President, Don Gilman, has broken his silence from 592 Swain Avenue, Elmhurst, Ill., to announce the birth of a son, Hugh Philbrick Gilman, last February. In a paragraph of his letter he

says: "I don't have any specific news about any of our classmates. Chuck Thayer is still at Montgomery Ward, and has two or more children to his credit. Rolf Eliassen is a professor at Armour Institute of Technology in Chicago, and up until last winter when I met him downtown at the Sophie Tucker-Victor Moore show, he wasn't married. Rolf Morral, who I thought must have been shot in the Spanish Revolution, called up a month or so ago. He is safely working away in a factory in Kokomo, Ind."

Jim Shackelford, whom I hadn't seen since he was working with Johns Manville, wrote me from Aberdeen Proving Ground. He was in the Manville research laboratory from February, 1934, until August, 1939, when he went to Price Waterhouse and Company as an inventory specialist. As he says: "I had a lot of fun traveling around the country, having a look at one plant here and another yonder. The inventory end of it gave me a chance to get away from deskwork and stretch my legs a bit, which activity I liked. The firm surely treated me great. I'd be there right now if it weren't for the martial outlook and my being one of the reserves and all. On July 5 I decided to sign up for a year, and a few weeks later was shipped to Aberdeen Proving Ground, the head post of the Ordnance Department. Hadn't been here long when I had the good fortune to meet Leslie E. Simon '29, a regular army man, who is executive officer of the ballistics research section. He has done a lot for the Army in the application of statistics to ordnance problems."

Carroll Wilson, who is dividing his time between Washington and Boston each week, has passed along two letters which came in response to the Alumni Fund appeal. (Why not include a letter with that check you have been meaning to send?) William R. Power, Jr., writes from the Appalachian Electric Power Company, Logan, W. Va., that it appears he should have studied building construction, since for the past two years he has been engaged in construction — first of an office building and then a warehouse building for his company at Logan. — Arthur Marshall is a motor carrier transportation engineer in Springfield, Mass. He has two sons, David, six, and Richard, two. Since leaving school he has been connected with the motor carrier transportation industry and has lived in Springfield since June, 1933.

From Charles E. Locke '96 we learn that Clarence Lee Woods of the Inca Mining and Developing Company has returned to Peru after a vacation in the States. — Frederic C. Alexander, Jr., who is at present an engineer with the Brewster Aero Corporation of New York, was married on September 14 to Dorothy Owen of New York. — Tom Sears was married on September 15 to Miss Jean Bullinger of Boston, who attended Wellesley and Katharine Gibbs. They will live at 9 Commonwealth Avenue, Boston. — Another recent marriage is that of Joseph Ivaska and Helen McLaughlin in New York on August 8.

Mrs. Ivaska is a graduate of Wellesley, having spent her junior year at the University of Madrid. They will make their home in Plainfield, N.J. — In late May, Marjorie Frances Moulton was married to Richard M. Cochran in Melrose. After a wedding trip to the Gaspé Peninsula they are at home on Union Street, Springfield, Mass.

This fall the wedding of Helen Higbee and Curtis Drew Cummings will take, or has taken, place. Miss Higbee attended Francis Shimer School at Mount Carroll, Ill., and the University of Iowa. — A notice of the engagement of Ruth Holsten to James D. Parsons said that their wedding was to have taken place in July in Venezuela, where Parsons is an engineer. Miss Holsten was teaching at Croton-on-Hudson, New York. — Genevieve Dalrymple and Donald Browning Walden were married in April. Mrs. Walden was graduated from the Hart Hospital School of Nursing at Roxbury. — Last February 3, Mary Ester Ritchey was born to the James G. Ritcheys of 2516 Hulbirt Street, Corpus Christi, Texas.

At the end of July, I received a letter from Martin Meyer, whom we all remember from our fifth. He writes: "I'm still chasing bugs and rats and was just elected executive secretary of the Philadelphia Purveyor's Pheasant Club, Inc. Robert Theodore Meyer arrived on May 11, and weighed seven pounds, three ounces. He weighs almost thirteen pounds now. We also bought a home at 7600 Spring Avenue, Melrose Park, and just got into it two weeks before Bobby arrived." — Manley St. Denis (formerly Fra Giacomo) now lives at 3867 Alabama Avenue, Southeast, Washington, D.C. — These notes are being written on September 24 for the November issue. A similar schedule is followed throughout the year. You might keep this in mind when writing to: — CLARENCE M. CHASE, JR., *General Secretary*, 1207 West 7th Street, Plainfield, N.J. CARROL L. WILSON, *Assistant Secretary*, Research Corporation, 137 Newbury Street, Boston, Mass.

1933

Had a letter from Cal Mohr in Rome, Ga., saying that in the July 25 edition of *Industrial and Engineering Chemistry* he had seen that "National Research Corporation, 100 Brookline Avenue, Boston, Mass., a firm formed to do research in physics and chemistry, has recently been organized by Edward LeB. Gray and Richard S. Morse. . . . Naturally, none other than Dick Morse, VI." We wish the best of success to National Research.

There were a few engagements this summer: Warren S. Daniels, I, to Dorothy W. Colbath of West Somerville; Mary D. Hatch of Waltham to Robert B. Grady, X; M. George Green, V, to Beatrice T. Gould of Worcester; and Manuel White, VI-C, to Gertrude A. Solar. Walter E. Albertson, VIII, who is an assistant professor of physics at the Institute, was married on July 20 to Dorothy E. Dobson of Jamaica Plain; and Gilbert W. King, V,

1933 Continued

was married to Abigail Adams of South Lincoln on June 19. — Beau Whitton wrote to tell us of the marriages of Eugene T. Sullivan, XVII, to Lillian M. Lagasse on August 24 at Haverhill, Mass., and of W. Cooper Cotton, XVII, to Mary Grywach of Superior, Wis., on August 12.

Earle and Louise McLeod announce the arrival of Charles Edson on July 9; Jim and Edna Turner have another swimmer in the family. — Jim can tell by the way he throws his arms around already, and he has proved he has a healthy pair of lungs; and the Emerson Norris' announce the birth of Cynthia Margaret on September 13. — During June, yours truly met Mrs. Gillespie, the sister of Tom Galvin, XVII. She gave us some of the low-down on Tom's activities. Tom is with the C. J. Maney Company, Inc., on a Federal housing project at Roxbury. Previously he had been at Orono, Maine, on construction work at the university there. He has been doing some skiing and sailing. — A letter has come in from the United States Engineer's Office telling of the death of John P. Hartman, I, in Denison, Texas, where he was in charge of embankment control and the soils laboratory. He was recognized as an outstanding expert in earth-fill construction. — GEORGE HENNING, JR., *General Secretary*, Belmont Smelting and Refining Works, Inc., 330 Belmont Avenue, Brooklyn, N.Y. ROBERT B. KIMBALL, *Assistant Secretary*, Room 3-102, M.I.T., Cambridge, Mass.

1934

It is with deepest regret that we must announce the passing of Richard Cavanagh on June 8. At the time of his death, Dick was employed by the Carnegie-Illinois Steel Corporation in the stainless steel division in Chicago. He was extremely popular with everyone who knew him and his loss is a severe one to our Class.

The influx of news has been exceptionally good this month, and we owe a vote of thanks to the contributors. Here is a letter from Johnny Hrones that needs no paraphrasing. "First, a brief personal history: After a year and a half as assistant to John M. Nalle '20, factory manager of the Coldwell Lawnmower Company, Newburgh, N.Y., I returned to the Institute in 1939, where I am teaching machine design and applied mechanics and at the same time putting the finishing touches on a doctor's degree. On May 25 the first heir to the Hrones's fortunes (Janet Carter Hrones) was born in Cambridge.

"Ed Sylvester is again located in Boston. He has a top-notch position with the Griffin Car Wheel Company, where he is doing a bang-up job. He is the father of a year-old son. — Frank Milliken stopped on his way back from a mining job in Canada. He has a two-and-a-half-year-old son. — Fran Jenkins was back in Boston for a vacation during July and dropped in to inspect the Hrones infant. Fran, after a short time in the materials standards department of the East-

man Kodak Company, Rochester, N.Y., was promoted to purchasing agent. In spite of sailing in the International Dinghy class summers and burning up the ski trails of New Hampshire and Vermont during the winter, Fran still manages to give Rochester society its share of attention.

"I see Fred Johnson and family three or four times a year. Fred is now working out of the Providence office of Fairbanks Morse Company, doing a fine job of sales engineering. He has one of the outstanding sales records of his organization. Fred's little girl is now a year old. — Bob Metcalf, who is with the Plymouth Cordage Company, Plymouth, Mass., dropped in the other day. He has been spending much of his spare time and energy in the fields of geology and astronomy. — Neal Karr is with the Singer sewing machine company in Bridgeport, Conn. Last message from Neal announced the birth of a daughter, Judith, on June 15.

"Larry Huff is also with Singer in Bridgeport. I understand that the Huff family has also passed the two mark. John Burwell is now at the Institute, in charge of the Lubrication Laboratory of the Mechanical Engineering Department. After getting his doctor's degree in physics, he spent several years in the research laboratory of Socony Oil before coming back to M.I.T. With John in the Lubrication Lab is Kaye (Kaminski). Rumor has it that wedding bells rang for Kaye last summer. — Elliot Bradford, after considerable experience in the oil fields of Texas, Oklahoma, and Illinois, came back to school to take the intensive summer course in aeronautics given for university graduates in an effort to fulfill the growing demands of the aircraft industry for trained men. Elliot hopes to head along the production-control road of the airplane industry.

"Roger Coffey, after several years of free-lancing at the Institute, spent a year at the Waltham Watch Company in the instrument department and now holds a responsible position in a similar department of Barbour Stockwell Company, Cambridge. Latest word is that Rog is now superintendent of the outfit. — Sam Joroff, after a year or more of safety engineering with an insurance company, is back at M.I.T. to get an advanced degree in City Planning. — Mal Stevens is now in the Mechanical Engineering Department and is taking over the welding courses this year. Mal was in Europe the summer before war was declared. The fine colored slides which he obtained, supplemented by his interesting running comments, have placed him in a position where he is eagerly sought by various groups, including (God forbid) women's clubs of various descriptions. (The latest on Mal is that he has been called to active duty with the Army and is to be stationed at the Institute.) — I have also received word that Ed Cook is now assistant to the general manager of the Baker Ice Machine Company in New York. — Al D'Arcy is with Mason-Neilan Regulator Company, Boston, and lives in Milton.

"While spending a few weeks on Long Island last summer, I called on Charlie Parker at his home in Garden City. Charlie is technical secretary of the American Iron and Steel Institute, located in New York City. Right now he is extremely busy with defense program details. His four-year-old son is just about set for school. Charlie also had news of Hal Eagan, who is now with the Hercules Powder Company, operating out of Wilmington, Del. Hal was married this past summer. — Last spring I received a card from Roger Williams announcing the arrival of a baby boy. Roger, I believe, is with the army engineers in Virginia. — Roger reports that his wanderings since 1934 have taken him with the United States Engineers from Boston, to the Cape Cod Canal, to Providence, R.I., to Norfolk, Va. From Norfolk he took fourteen months' active duty with the Civilian Conservation Corps in New Mexico and since then he has returned to the Engineers at Norfolk, where he is working on flood-control reports.

From Harold Butters we hear the following: "During the past year I was employed in this country [Venezuela] by Parsons, Klapp, Brinckerhoff, and Douglas, consulting engineers of New York. We are primarily engaged in design and estimate work in connection with various public works projects for the Venezuelan Government. The outstanding incident of my stay in Venezuela was my marriage on April 19 to Miss Doris E. Hubbard of Freeport, Long Island, to whom I was engaged for over a year. In order to avoid the delays involved in a wedding here, we were married at sea by the captain of the S.S. *Santa Rosa*, on which Miss Hubbard sailed from New York and which I boarded at La Guaira." — Tom LaCava recently received a promotion to foreman of the water department of Chelsea, Mass. His appointment was made as the result of recent work he did in supervising the W.P.A. survey which detected water waste from pipe seepage in all sections of the city.

Our society column for this month is full to the brim with important announcements: Mr. and Mrs. Barton C. Emery of Holliston, Mass., announce the engagement of their daughter, Sally, to Reuben M. Haines of Concord, N.H. Miss Emery was graduated from the Simmons College School of Nursing in 1939. The wedding will be sometime this fall. — Oliver Damon recently became engaged to Margaret Sabre, daughter of Mrs. George F. Sabre of North Billerica, Mass. Miss Sabre is a graduate of the Lowell General Hospital Nurses' Training School. We should say that both Haines and Damon will receive the proper care "in sickness and in health."

The wedding of Frank Faillace to Miss Natalie Galvin, daughter of Dr. and Mrs. Charles K. Galvin of New York City, was set for September 25, so that by now Frank will have joined the ranks of the benedicts. — Bob Jordon is planning a trip altarward with Nellie C. David, daughter of Mr. and Mrs. William David of Philadelphia. Miss David is a graduate

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of Mount Holyoke College, Class of '37. At present, Bob is located in Northampton, Mass. — Phil Goodwin, whose engagement was announced in an earlier issue, was married to Phoebe Elizabeth Steel of Newark, Del., on August 3. As you may remember, Phil holds a position with the Continental-Diamond Fibre Company in Newark.

On the thirtieth of June, James B. Kendrick was married to Ruth Anne Rowe in the Church of Our Saviour, Brookline, Mass. Mrs. Kendrick is the daughter of Irving A. Rowe of Troy, N.Y., and Mrs. Ruth C. Rowe of Boston. After a short honeymoon, the couple drove to California, where Jim is doing engineering work for one of the aviation companies. — Another to join the ranks of the benedicts is Walter R. Hedeman, Jr. He was married in June to Elise Thomas, daughter of Mr. and Mrs. Charles F. Thomas of Brookline, Mass. The wedding took place at Houston, Texas. — Wallace Adams was married on May 17 to Olive May Palmer at Amesbury, Mass. Mrs. Adams is the daughter of Mr. and Mrs. George W. Palmer of Amesbury. Wally is with the Moore Dry Kiln Company of Jacksonville, Fla., and it is in Jacksonville that the couple are residing. — Vito Battista was married in June to Miss Josephine Palermo, daughter of Mr. and Mrs. Salvatore Palermo of Brooklyn, N.Y. Vito is an architect in the Department of Public Works in New York. — July 6 marked the marriage of Miss Barbara White to Charles E. Sheehan at Stoughton, Mass. Mr. and Mrs. Sheehan are living on Prospect Street in that town.

A note from Al Loring brings news of Art Esslinger's marriage — but read it for yourselves: "Thought the boys might be interested to know that Art Esslinger was married last month [June] to Jean Fisher of New York and the Englewood Yacht Club. They are living on board the yacht *Cemar* for the summer, Art commuting from the Englewood Yacht Basin daily to write those superexasperating zipper (pardon — Talon slideless fastener) ads somewhere under John D.'s roof — that glorified shack known as Radio City. The little woman is really worth going around to see, but don't make the mistake I did trying to find the Esslingers comfortably tied up at the club basin. They tell me teaching the little lady to cook is a profane business and not to be attempted where kibitzers can interfere." — Leo Carten was married on August 31 to Alberta Annon, daughter of Mr. and Mrs. Lloyd W. Annon of Clarksburg, W. Va.

Here is an announcement from Dick Sanders that speaks for itself: "Announcement of New Developments, *Sanders Aircraft Ltd.* Name, Stephen Richard Sanders; Model, Mail Monoplane; Serial No., One; Test Flown, July 3, 1940; Weight Empty, Fully Equipped — 7 lbs. 4 oz.; Length Overall, 19½"; Power Plant, 2 Lung Power Hot Air Motor; Fuel Capacity, 4 oz.; Duration at Cruising Power, 4 Hours; Range, Within Bassinette (to be extended); Service Ceiling,

High 'A' (above middle 'C'). Other Special Features: Stressed Skin Structure Over Skeleton Frame with Shock Resisting Fairing; Landing Gear Located directly below Center of Gravity; Designed for Carrier Operation; Exceptional Longitudinal Stability. President in Charge of Production, Jean E. Sanders; Vice-President and Chief Engineer, Richard Sanders. Home Office, 1245 Sherman Street, Alameda, California."

Kevin Malone reports the arrival on June 15 of Bruce Kevin Malone who, by the first of August, had reached a weight of ten pounds and had shown marked vocal attainments. If he does not develop into a miner like his father, he shows good promise of making a mark in the field of oratory. — A letter from Harold McKay, Jr., reports the birth of a daughter. Earl Murphy believes in doing things in a big way. A card from Pedro Miquel, Canal Zone, announced the arrival of Judith Evelyn and Janice Edna on June 5. Earl added, "Here are a couple of good looking coeds for the Class of 1962." We might add — a couple of JEMs. — JOHN G. CALLAN, JR., *General Secretary*, 184 Ames Street, Sharon, Mass. ROBERT C. BECKER, *Assistant Secretary*, Chile Copper Company, Chuquicamata, Chile, S.A.

1935

The class reunion last June was pronounced highly successful by all who attended. It was held at the Mayflower Hotel in Plymouth, Mass., on June 1 and 2. The early birds arrived Saturday noon and others kept drifting in during the afternoon. The following were present at some time during the two days: Maury Alexander, Leo Beckwith, Hal Bemis, Jack Burton, Warren Clapp, Lloyd Clark, Jack Colby, Dave Dale, John Duff, Leo Epstein, Les FitzGibbon, Gregg Fry, Gerry Golden, Bob Granberg, Pete Grant, Walt Green, Al Greenlaw, Jack Holley, Phil Johnston, Mike Kelakos, Henry Kimball, Dick Lawrence, Fred Lincoln, Phil McGoohan, George Morrisette, Jim Notman, George Peterson, Bill Root, Jack Ryan, Dick Shaw, Charlie Smith, President Smith, Dick Smith, Walt Stockmayer, Bob Spinney, El Szantay, Johnny Talbert, Ed Taubman, Fred Tone, Milt Weiss, Len Wiener, and Winnie Winiarski. Also present were Mrs. Holley and Charlie Ayers '34.

During and after lunch old friendships were renewed and the usual questions and answers exchanged. The married men showed the effects of their folly by taking a shellacking from the single men in the baseball game. Perhaps some would have had better luck if the committee had supplied baskets, tennis rackets, and basketballs in place of the customary equipment. There were, however, a few home runs, some wild plays, and enough excitement to provide everyone, including the spectators, with plenty of fun. Some of the fellows who did not join in the ball game played a few rounds of golf on the nine-hole course. They were pretty reticent about their scores — we need only one guess for the reason. Lloyd Clark claimed the winning score and

finally walked off with the quart prize after much argument. Tennis also got under way during the ball game.

Toward the end of the afternoon a few hardy souls took a dip in the near-freezing water (at least it felt as if it were freezing). Needless to say there was no hesitation on the part of anyone when the call to dinner was given. After dinner it was not long before the bar was jammed. At once an exchange of stories began, which lasted well into the morning. "What" Duff led off and was ably assisted by Bemis, Stockmayer, Burton, Lawrence, Johnston, Colby, Shaw, Grant, Holley, and Fry, with nearly everyone chiming in now and then with another story or song. Later in the evening three gals showed up and enjoyed the experience of being mobbed for dancing to the juke-box music. The party which started in the bar was continued far into the night in various rooms.

Sunday was another perfect day for sport. A few hardy souls who escaped a big head showed up for breakfast, after which sports again attracted many. The tennis court was in use continuously and the matches were hard fought despite a somewhat limited court — the backstops were a bit close. Golf was resumed, and a fishing expedition was organized. Several turned out for a swim before dinner. The swimming was a matter of staying in until one became numb, after which one could swim without noticing the cold. At least it was invigorating. After a dinner of boiled lobster most of the fellows relaxed on the very comfortable veranda, there to quaff beer and enjoy a bull session. About the middle of the afternoon the lads started drifting off in twos and threes with the memory of a very enjoyable occasion.

Orchids go to Fred Travers who is soo-ooo devoted to his wife that he could leave her only for a couple of hours to put in a very brief appearance at the reunion, all this in spite of the fact that he lives and works right in Plymouth. Prize example of futility concerned Al Greenlaw, Johnny Talbert, and Jack Colby, who tried fishing. They started out and rowed about a mile through a fairly choppy sea to a rock where they anchored. After this gruelling work they discovered that they had left all the tackle, bait, and so forth on the shore. They nearly broke their backs rowing all the way back to shore and out again just to catch one very small cod. — Surprise of the evening came when the gals got worried by an apparition in pajamas on the dance floor. Rumor has it that under the pajamas was Jack Burton. — Larry Hall showed up for a short time on Sunday. — He and Fred Travers ought to get together and figure a way to stay longer next time. Ed Taubman was busy a good deal of the time taking movies of the event with a camera borrowed from school for the purpose. Later, Milt Weiss helped out on the photography.

Nearly forgot to give you fellows an account of the Alumni Day following the reunion. Present at lunch in Du Pont

1935 Continued

Court were Karl Achterkirchen, Bissell and Mary Alderman, Chet Bond, Jack Burton, Bob Clarke, John Duff, Les FitzGibbon, Jack Holley and wife, Mike Kelakos, Dick Lawrence, Phil McGooohan, Bob Madden, Phil Rhodes, Charlie Ross, Jack Ryan, Bob Spinney, Walt Stockmayer, El Szantay, and Ed Taubman. At the banquet that evening twenty-four members of the Class were present, mainly those reported above.

Some of you may have been wondering what happened to the class survey. At a meeting of those present at the reunion it was decided that the time was not a good one to issue a survey in view of the fact that M.I.T. has just issued a new "Register of Former Students," which to a large extent gives the same information as would the survey. The survey may be issued in a year or two so as to come between issues of the "Register."

With the passing of another summer we have a new crop of marriages and engagements to announce. John C. Alden and Evelyn Louise Engborg were married on June 5. John was with us for three years. Paul Di Nunzio and Caroline Grasso were married on July 7. Hal Everett and Jean McCollum were married on June 8. Hal is with the Foxboro Company as a sales engineer. Alex Frank and Louise Rosenbaum were married on June 1. Alex is with Krasilovsky Industrial Contractors as a layout engineer on plant moving and erection work. Bob Forster and Carolyn Proper have announced their engagement. Bob is with the Davis Refrigeration Company in Buffalo. John Greze and Louise Miller were married on September 24. John is working as biologist with the Zonite Products Corporation in New Brunswick, N.J. Dave Hollidge and Elizabeth Smith were married on June 1. Steve Perry and Sylvia Purcell were married on August 3. Steve is with the Standard Oil Development Company on process research. Jack Taft and Marcelle Perkins have announced their engagement. Mal Porter and Helen Bull were married on July 3. Mal is now with Du Pont in their explosives division, doing field service work. Your Secretary, having reported numerous engagements and marriages, has at length succumbed himself. His engagement to Miss Barbara Emps of Staten Island has just been announced.

Here are a few odds and ends of news that have been picked up during the summer. Bob Madden is now in Johnstown, Pa., where he has joined the Bethlehem Steel Company. Phil Rhodes is teaching chemistry at the Junior Technical College in Portland, Maine. He has also been doing some consulting work with a Harvard graduate on problems in plastics. Charlie Ross is with the Container Corporation of America in Chicago. He has married and is now a proud papa. Chet Bond is doing marketing research for Hooper Homes Bureau in their Boston office. Jack Miller is working for Coleman Brothers, who are contractors on the Franklin Dam in Franklin Falls, N.H. Larry Hall is also at Franklin Falls, working for the United States Engineer Department.

Dick Drury, who was working as an architect for Arnold Southwell, is now with American Maize Products Company in Chicago. Fred Pruyn has returned from Chile and Bolivia and is now in New York City. Ewing Spering is with E. H. Porter Construction Company in Peabody, Mass. Bissell Alderman has returned to the school of architecture of the University of Washington in Seattle. Ed Collins, who was with the Carnegie-Illinois Steel Corporation, has now joined The Enamel Products Company in Cleveland. Les Lappin left Federal Telegraph to work for Harvey-Wells Communications, Inc., Southbridge, Mass.

The most recent of our classmates to gain recognition in the newspapers is Dorothy Thompson, who is a professor of chemistry at Wheaton College in Massachusetts. Together with an associate, Miss Thompson has discovered a substance which may prove to be the long-sought-for synthetic quinine. If the discovery lives up to expectations, it will be of great value to the medical profession. — ROBERT J. GRANBERG, *General Secretary*, care of W. C. Voss, 9 Old Town Road, Wellesley Farms, Mass. RICHARD LAWRENCE, *Assistant Secretary*, 111 Waban Hill Road North, Chestnut Hill, Mass.

1936

We were all deeply shocked to hear of the death of Bill Benson on June 1, along with three other Douglas men, when the nine-ton Navy R3D-1 cargo plane they were testing crashed on its maiden trip. After being graduated from M.I.T. he obtained an A.E. degree from Stanford University in 1938 and joined the Douglas company in June of that year. At first he did aerodynamics and stress-analysis work, but during 1939 he was employed as a flight engineer and the early part of this year was made head of the flight-test department. He held a student pilot's license and was about to apply for a 4M private license. "One of the most promising engineers of this organization," was the characterization of him by the head of the El Segundo division. The disaster was caused by crossed cables in the aileron control system, which interfered with the pilot's ability to control the plane properly after take-off. Bill and his three companions were instantly killed. Last September he married the former Virginia K. Brooks of San Marino, Calif., and since then they had lived in Santa Monica. We extend our heartfelt sympathy to Bill's parents and young widow. — With deep regret we must also report the death of Bill Lindstrom, who was associated with us during his graduate year. After a brief illness, he passed away in New York on May 23. After leaving the Institute, he received a master's degree at Cal Tech in 1938 and was then meteorologist for Pan-American Airways at Brownsville, Texas. Before his death he had been with American Export Airlines at Floyd Bennett Field, Brooklyn, in the same capacity. His wife and infant daughter survive him.

Doug Cairns got his name prominently displayed in the papers when he started off the wedding season and was married

on June 1 to the former Kathleen Keville, daughter of Colonel and Mrs. William J. Keville of Belmont. Following a reception at the Algonquin Club, Boston, the couple left for a two weeks' trip to Virginia Beach and then returned to their home in Falmouth Foreside, Maine. Soon after, on June 8, was the wedding of Charles Brown, who was with us during our freshman year, to Rosalie Ely of Rutherford, N.J. Brown was graduated from Annapolis in 1938 and is now stationed on the U.S.S. *Cole* in the Philadelphia Navy Yard. Also recently married is Bud Milone, who became a benedict on July 21. The bride is the former Helen Josephine Hale of Simmons and Chamberlayne School. Since receiving his Ph.D. in 1939, Bud has been employed by the Goodyear Tire and Rubber Company in Akron, where the newlyweds now reside. We have news of the marriage of Johnny Drew on August 10 to the former Mary Stuart Fishback of Versailles, Ky. Best man was Henry Runkel, who is employed with Johnny at the St. Louis Curtiss plant, and who, by the way, was recently married to the former Natalie Dean. After receiving his master's degree in economics in 1937, Johnny was employed by Curtiss, first in Buffalo and later at St. Louis. Following a motor trip for two weeks through Michigan, Mr. and Mrs. Drew returned to their home in Ferguson, Mo. Completing the roster of marriages is that of Jim Leary to the former Angela D. Izzo of White River Junction, Vt., on August 17. The bride is a graduate of Boston University.

As an indication of impending marriages, we give the following list of engagements: Alden Anderson and Mary Jane Livingston of Marblehead; Henry Mabie and Ingeborg A. Swanson of Roslindale; Dr. Edward L. Pratt (Ed received his M.D. from Harvard Medical School last June) and Esther May Fillmore of Hillsborough, New Brunswick; Art Jaeger (now with the engineering department of R.C.A.) and Thelma Jacquelyn Mollineaux of East Orange; and Sidney Speil (with the Bureau of Mines in Norris, Tenn.) and Rose Glazer of Dorchester. — We wish to announce the birth of a daughter, Joan Frances, on June 30 to Mr. and Mrs. Bill Lewis.

George Parkhurst has recently been appointed to the faculty of Franklin Union Technical Institute in Boston. Before that he was control chemist with Du Pont. — Brent Lowe is now in the sales division of Rohm and Haas of Philadelphia, having left his position with the Auburn Button Works. He is still in the plastics line, his new outfit being the makers of Crystalite and Plexiglas. — George Ray, formerly with Curtiss in St. Louis, is now with Douglas in Santa Monica. — Marc Warmuth, who used to be employed by Fleetwings, is now with Lockheed in Burbank. — And Ed Dashefsky has been transferred from St. Louis to the Buffalo Curtiss plant. — Frank Berman and Elliott Robinson are both former civil engineers who have crashed into the airplane business. Frank is at Buffalo Curtiss doing stress-analysis work after receiving

1936 Continued

his M. S. degree from Technology this year, and Elliott is at the same plant in experimental work along the lines in which he received his M.S. degree last June from Harvard. — Still at Buffalo Curtiss are Fred Flint, Dick Koegler, and Loreto Lombardi, making quite a group from our Class.

Al Horton has received a temporary leave of absence from Standard Oil of California to take over a job in the United States Office of Education in Washington. The job involves contact work with engineering schools in connection with the government's program of intensive engineering courses to prepare men for the vital defense industries. Al was well suited for the job because of his work as secretary to the committee for accrediting engineering schools while he was assistant to Dr. Compton. — Johnny Pappas is with Pratt and Whitney Aircraft in East Hartford. — Charlie Parce is with the Rio Grande Building and Loan Association in Harlingen, Texas. — Harold Brown is back in the Worcester plant of the American Steel and Wire Company. — Ed Boyan is also an American Steel and Wire man, but is located at the Cleveland plant. — Warren Devine has turned up in Seattle, where he is working for Pacific Alaska Airways. — An addition to the crowd in New York City is Fred Hinton, who is in the comptroller's department of the United States Rubber Company. — Gerry Blackburn is now Lieutenant Blackburn, stationed at the Royal College of Canada Workshops, Petewawa Military Camp, Ontario, Canada. — Fred Assmann is another addition to our Buffalo crowd and is employed by the National Aniline and Chemical Company. — And just to slip in a couple of rumors, I might mention that both Vernon Osgood and Rudy Ozol are planning to commit matrimony in the near future.

On a recent trip to Boston, I managed to see several members of our Class. I had lunch with Dick Odiorne, who is still an advertising engineer with Sutherland Abbott. I was sorry to hear that the Odiornes had given up their Back Bay apartment with its many gadgets and labor-saving devices, but learned that they were planning to move out of Boston where a house with a yard and flowers can be had for Louise. Dick told me that Johnny Bartol, who was with us our freshman year and has since been graduated from Annapolis, was married and is stationed on the Pacific Coast with the U.S.S. *Saratoga*; and that Billy Robinson is in New York City doing sales-promotion work for a publishing house, while his wife, Agnes, is writing her second novel. But my biggest surprise was to learn that Ralph Morrison had left his job with the Harvard Press to seek a career on the stage. He has acted in several plays at the Copley Theater in Boston, and had a long engagement this past summer at a Vermont theater. — I also lunched with Bob Sawyer, who is still pipe-stress expert with the E. B. Badger and Sons Company, designers and builders of oil refinery equipment. He reported little change in the status of the Course XVII group. Willy Mullen and

Dick Halloran are now in the airplane business in California, after having taken a ten weeks' course at the Institute which will make an aeronautical engineer out of anyone but a Course XV man. Norm White is working for his dad, and Angie Tremaglio is probably still employing the rest of the group building a post office somewhere, although they've about run out of sites in New England.

During this recent trip I didn't eat all the time, but I had dinner with Harry Essley, Fletch Thornton, and Bill Garth. Harry is now with the Polaroid Corporation in back of M.I.T., where he is working at top efficiency because he is in a familiar atmosphere (remember the unique combination of smells — soap, candy, mayonnaise, and so on). Harry has charge of two small departments for the company, the millwrights and the machine shop. Also in charge of a department for the same company is Carl Peterson. Fletch Thornton is now living in Hingham and working in Quincy at the new soap plant of Procter and Gamble. His job is training the new operating personnel for the plant. Fletch has invited the Class to hold its five-year reunion next June on his estate, but we will have more details about that later. Bill Garth is back in Boston with the Manufacturer's Mutual Fire Insurance Company, after a couple of years in Charlotte, N.C., as a sales engineer. Bill has worked in practically every department of the fire insurance business and is now engaged in some original work. At this meeting I learned that our prexy, John C. Austin, is now working for the publishing firm of Case-Shepard-Mann as one of the editors of *Water Works Engineering*.

I spent a very pleasant hour with Carl Olson at his home in Melrose and I had an opportunity to meet his wife. Carl is still with Leroy M. Hersum in Boston and had quite a bit of news to offer about the former civil engineering group. Bill Shea was married several months ago and was working for a while on a housing project in Hartford for the E. J. Rappoli Company. Dan Burns was also on the same project working under Bill. Previous to that, Dan spent a while on construction work in Egypt, but the war brought him home to this country. After working on a sewage-disposal job in Hartford and for the L. M. Hersum Company, Halsey Weaver is again with his brother on a construction job at Exeter. Bill Prudente was with the Metropolitan sewage commission for a while taking some borings, but he has again dropped out of sight. Seth Nickerson was with the S. J. Graves and Sons Company of New Jersey, a grading outfit, and is now back on Cape Cod with his father. He is married and has a baby girl. Jim O'Neil is also married and still working with his father. Frank Lesard continues to design reinforcing steel for the Bethlehem Steel Company in Boston, and Jim Carr is still advocating wood as an engineering material with Timber Engineering Company in Washington. We figured that Ariel Thomas must be in Illinois running a sewage-disposal plant as that was the last we heard of him. —

Let me remind everyone that the first week end of next June will mark our five-year reunion. A suitable commemoration is being planned, and information about the plans will soon be sent to all members of the Class. — ANTON E. HITTL, *General Secretary*, 109 Shepard Avenue, Kenmore, N.Y. ROBERT E. SAWYER, *Assistant Secretary*, 55 Robinwood Avenue, Jamaica Plain, Mass.

1937

Yours truly has moved from a three-room domicile to a larger house in the country. We really have plenty of room here, and anyone passing by is more than welcome to stop. — Norm Robbins writes from California that the aircraft industry is working like a beaver at all hours and at great speed. He has nothing on us.

As usual at this time of the year, we have a great number of engagements and marriages to announce: On May 25 was announced the engagement of Clara Butler of Averill Park, N.Y., and Charles Wetmore, who is now in Albany. On June 2 came the announcement of Joan Price's engagement to Paul Rudy. And on July 18 came an announcement that on July 27 the wedding of Jo Ann Williamson and Jim Newman would take place. We have heard nothing more. Are you safely wedded, Jim? — And now on the marriage side: Miss Eleanor d'Este of Montclair, N.J., was married on May 24 to Edward Mosehauer. In Shaker Heights, Elinor Thomsen took Al Busch for her wedded husband. John Brookes took Dorothy Bidwell as his bride in East Falmouth, Mass., on June 29. In Rochester, Verner Kreuter marched down the aisle with the former Jean Reed. Well, Vern, when you get this marriage business reduced to a good equation, let's have it. We're always interested. — Mortimer Nickerson, on July 30, dived overboard with Lucille Cook at Winthrop, Mass. Mortimer and Lucille are now keeping house in Charleston, W.Va., where I should guess that he is with Carbide and Carbon Chemicals Corporation. — Also, Carl Pearson and Harriet Childs were married in Waltham on August 13. — Ruth Turner of Mirror Lake, N.H., whom many of us from the School of Architecture will remember, was married in the first week of August to Roger Wingate of Melrose, Mass. Roger was one of our graduate students. They are now living in Atlanta, Ga. Quite a jump from New Hampshire to Atlanta.

Let's follow Paul Allen from Ishpeming, Mich., to Crystal Falls, to Ishpeming again. What is the story, Paul? All I know is that you have been transferred. The Secretary is thirsting for news as are the rest of us. — Down the Schuylkill went dashing Allen Hazeltine. Everything was going fine until — something went wrong! Over he went that day. He advises that the Schuylkill is dirtier than the Charles. Is that possible? This may be a potential field for research. Allen is with Philco Storage Battery Company, where his job has to do mainly with patent applications relating to television. He has a law-school course as a night side

1937 Continued

line. — Speaking of filters and equalizers in a language that amazed and confounded the undergraduate news editor of the *VI-A News*, Dave Tuttle told of his work with the Bell Telephone Laboratories in New York. Dave has been spending his spare moments in courses in physics at Columbia. Bell Laboratories also have another VI-A man in Johnny Craig '38. Mr. and Mrs. Craig are now living in Bloomfield, I believe. — Many of us have seen in *Life* the superfast action pictures made by Gjon Mili '27. I hear that Joe Keithley, who is also with Bell, has been working on the side with Mili, evidently on the technical side. Is that right, Joe? At Bell, he has been working on the installation of a new Teletype system for General Electric.

Fred Altman, who is with Westinghouse at Bloomfield and who, by the way, has not written me in quite some time, nor have I seen him much at the meetings of the M.I.T. Club of Northern New Jersey, wrote to the *VI-A News* as follows: "I'm still with Westinghouse but with the Motor Division — no longer a student, but a bona fide Instrument Engineer. — The plant is divided into three main divisions — Meter, meaning integrating devices like watt hour and demand meters; Relays, fancy ones for protecting high voltage transmission lines; and Instruments, including everything else, such as switchboard, miniature, and portable instruments. At present I'm working on a tachometer, a little AC generator-rectifier meter, but with millions of problems of design and production like temperature compensation, magnetic shielding, and so on. . . ." — Jim McLean writes to the *News*, also: "In September, 1938 I came out here to G.E. to do electrical development on receivers in the General Engineering Lab. Last June, I transferred to the Radio Department to do mechanical work on receivers. My boss was E. A. (Ted) Leach, a VI-A grad some years ago ['27]. I had just gotten under way in the design section when I had a chance to go into the commercial section (Radio). In October I transferred to Government Commercial. In November (Armistice Day), Margery E. Harris of Waterbury, Conn. (Conn. College, '36) and I were married. We have a fine place here in Schenectady."

Bob Childs has left Columbia University Medical School and is now with the experimental drafting department of the Parker instrument division of the Bendix Aviation Corporation in Bendix, N.J. — Paul Yurkanis is the first one we have heard of who has gone in for the Army Air Corps. He was graduated from the army flying school, Randolph Field, Texas, and when last heard of was with the Ninety-ninth Bombardment Squadron. There is no telling where he is now.

Say, fellows, I didn't get much of a response from those letters I sent. What happened; did you get them or didn't you? This stone wall of silence won't look so good in *The Review* next month. By the way, note my new address. — WINTHROP A. JOHNS, *General Secretary*, Route 1, Blackwell's Mills, Belle Mead, N.J.

1939

First on the repertoire appears to be the wedding of Bill Wingard, our prexy. Bill was married to Abigail Kimbell of West Newton on July 17. After the marriage Bill and his bride left for Oklahoma, where he entered the employ of the Carter Oil Company at Tulsa. Rocky Roberts, XIX, was an usher. Continuing with the summer's successful, scintillating romances, we note the marriage of Elizabeth K. Scott of Oak Park, Ill., to Ryder Pratt, XV, on October 5. Also, Bill Beer, XII, was married to Joan B. Chandler of Plymouth, Mass., in June. Mr. Beer attended Colby Junior and Wellesley colleges. — Robert Pancake, III, left the North Whitney Mines, Ltd., in Quebec last spring to return to New York to seek another job. He had good prospects of going to Chile, but they were upset by the European war. In July he secured a job as sampler in the mines of the Anaconda Copper Company in Butte, Mont. He was married in October to his girl from Garden City, Long Island. The couple are making their home in Butte.

And with a few well-chosen huzzahs, we quote from Nick Carr's letter, giving the news of Course X: "Sorry to have neglected you for so long . . . same old story, you know: thesis, beer parties, finals, senior week; all of which ended with one glorious whirl and passed into peaceful oblivion. The main news of interest is that George Beesley was married to Eleanor Cook on May 30. . . . She's a swell gal, and they're both very happy. Wilson B. Keene is about to take the fatal step [he did, on June 12], marrying Elizabeth Davis of Erie, Pa.

"Here's a brief recap of the practice school men and their respective occupations: Jim Farrell has gone with the Hercules Powder Company at their research and development station outside of Wilmington; Bucky Keene works for the E. B. Badger and Sons Company in Boston. You'd think he'd had enough of that, but not Bucky. Carl Lenk is now a Du Pont man in the Jackson lab near Wilmington. Incidentally he, Jack McKay '40, and Dooley '40 have an apartment in that cheery city. L. Burns Magruder or, rather, Plushy, is off to the Standard Oil Company of Louisiana and is located in Baton Rouge. Bill Merritt is with Standard Development in Elizabeth; Bill Mohlman, with Carbide and Carbon; and Manny Morrill, with the Standard Oil Company of Indiana, Whiting, Ind. Brownie Parker is with the Monsanto Chemical Company in Indian Orchard, Mass.; and Paul Schneider works for the Tennessee Eastman Corporation. Finally, Johnny Vyverberg is with Du Pont in the Eastern Lab at Gibbstown, N.J., and Joe Weeks is off for the Texaco Company in Port Arthur, Texas. Yours truly is in the rayon industry with the American Viscose Corporation, Marcus Hook, Pa.

"A few of the lads came back for Class Day and the banquet in the evening and, although I wasn't able to be there, I understand the expected good time was had. Among others, Hal Seykota was back.

The Class was rather well represented at the annual beer party at the Hofbrau the night the theses were due." — Thanks, Nick.

"News seems to be coming in in reverse; information comes out like an impacted wisdom tooth," wrote Win Reed, X, last June. Thanks, Win. Bluntly, boys, if the Consolidated Press Clipping Bureaus run out, there's going to be an awfully empty column in these parts. A penny post card will guarantee to get your name in print. Thanks to C.P.C.B. we have the following announcements: Jim Abeles, XIII, was married to Elizabeth Brunet of Providence on August 24. Bill Babcock, I, has become engaged to Jane Sweet of Ridgewood, N.J. No definite date as yet has been set for the wedding. Also Bill Pulver, XV, who last winter worked at the Institute for Professor Fernstrom '10 is engaged to Adrienne Thorn of Melrose, Mass. Miss Thorn was graduated from Wellesley in 1939. Phil Lucas, V, who is now working as a research chemist in New York, recently married Julia Kaufman. Course V again rings the bell with the announcement of the marriage of Hewitt Fletcher to Ann Winter of Needham. Mrs. Fletcher spent the past year at Radcliffe, and Hewitt is doing graduate work in chemistry at the Institute.

Edging onto the south, we note the following announcements from Course IV: Ed True engaged to Mildred Richenburgh of Roslindale; Edgar Brown engaged to Frances Muther of Newton Centre; and Leonard Krause likewise engaged, to Helen Bean of Fitchburg, Mass. — Dropping down a couple more we note in Course II the engagement of Jack Detlefsen to Elinor P. Gooding of Hanover, N.H. Miss Gooding is a graduate of Mount Holyoke College. And we find Wladyslaw Sandowski engaged to Charlotte Ross of Brookline. Also engaged is Norm Taylor, VI-C, to Jeannette Mary Walker of Melrose, Mass.

A very cheery note was received recently from Rocky Roberts, announcing a revitalization of that sterling organization known as Pi Beta Tau, one of our more unique serious-thought groups. Although general headquarters may have to be changed to New York, we expect to hear more and frequently from the anti-bender boys. — And from another Course Secretary with a conscience we quote from a newsette headed: "cheMIsTry news and Views." "M.I.T. is still the roosting place of many of our boys: Joe Donovan, Hewitt Fletcher, Herb Jaffe, Ernie Kaswell, Johnny Ohlson, Eddie Rittner, James Schulman, and Red Woolaver. Cupid Berman is a research technician at the Harvard Medical School, and Ida and Miss Garber are unaccounted for.

"Jack Carter is married and working as a patent writer for the Shell Development Company in San Francisco. Other married *camaradas* include Hal Snow, working for Du Pont in Buffalo, N.Y., and Stueie Stearns, working for Merck in Rahway, N.J. Cohen has joined the army and, when this was being written in September, was stationed at Edgewood

1939 Continued

Arsenal, Md.; Bill Davis is still working for Liberty Mutual in Boston, while Dave Mullin is in Cambridge, working for Carter's Ink. Jack Stiff had his thesis published in the *Journal of the American Chemical Society*, and is working with the Pittsburgh Plate Glass Company, paint and varnish division, in Newark. Your [Course V] Secretary was at the Barrett Company for the summer, and will be at Illinois for the next two years, he hopes." — STUART PAIGE, *General Secretary*, Box 207, Greenwich, Conn. MORRIS E. NICHOLSON, *Assistant Secretary*, M.I.T. Graduate House, Cambridge, Mass.

1940

A few days after graduation I met Rowland Peak and his wife at Mount Vernon, seeing Washington's home and part of the beautiful country of Virginia. While in Tulsa I spoke to Ben Griffith, who told me that he hoped to be placed there close to home if possible. Some weeks later, while in St. Louis, I called Loren Wood's home and was told that he had already started work with the Maytag Company, makers of washing machines, in Newton, Iowa. The last I heard, Loren was rooming with Dick Crossan.

While on my trip back East it was my pleasure to stay overnight in Coraopolis, Pa., with Val deOlloqui, who is now working with the Dravo Corporation of Pittsburgh. Val told me that he was doing special work in the welding department. He is making a study to determine advantages and disadvantages in the use of welds. Pop Warner also is with Dravo, and is laying some switches and turnouts for them. Although he was graduated in '39, he will be remembered by many of our Class as he worked with us during our last year. On the same trip I stopped at Bethlehem, Pa., to see Joe Jeffers, who is enjoying the loop course offered by Bethlehem Steel Company and who says he is finding plenty of work to do. — All of the fellows who attended Camp Technology the year we were there will be interested to hear of the reunion party which was held in Newark, N.J., a few weeks ago. A dinner party and then a long discussion of the happenings in East Machias were attended by Cocchiarella of the Newark College of Engineering; Cope land; Garrison, Grossi, and Koch, of N.C.E.; Scully '39, Sullivan; Valente of N.C.E.; and your Secretary.

A number of engagements and weddings have been called to my attention: The marriage of Eleanore Clark to Charles DeMailly took place on September 28. The DeMaillys will live in New Bedford. Ann Mary Power of Worcester was married on August 31 to Charles E. Slynstad, who received his master's degree in Chemical Engineering last spring. Mr. and Mrs. Slynstad are making their home in Jersey City, N.J. Anna C. Benedict was married to Robert Millar on June 15. They left immediately after the ceremony for Honolulu and now live in Wenham, Mass. Jean Fassett '41 was married to J. Martin Rosse on July 27. Rosse is working for the Diamond Match Company in Milton, Mass., where he is following his study in the School of Architecture by designing small houses for the company. Miss Janet Smith was married to William P. Ready on August 3. They are at home in New York City.

I lost the best Course Secretary whom I have had to date when Edith M. Cameron was married to Edward J. Kingsbury, Jr., on September 7. Mrs. Kingsbury wrote me that they live in Keene, N.H. Also from her helpful letters I have learned of the plans of other Course IV members. Perhaps she will continue this reporting even after marriage. — Engagement announcements have come to me in a steady stream: Sally Cram to Robert A. Bittenbender, Leslie Eustis to George E. B. Hill, Claire Corrigan to Augustin J. Powers, Jr., Joan Waterhouse to John A. Vanderpoel, and Elizabeth Jamieson to Theodore E. Dinsmoor. Several of these engaged couples have since been married.

William Mounce is employed as metallurgist for the Hamilton Standard Propellers Company, United Aircraft division, East Hartford, Conn. — Herbert E. Hawkes, Jr., who received his Ph.D. in Geology last June, is now employed by the strategic minerals survey of the United States Geological Survey, with headquarters at Altadena, Calif. — William K. Overturf and Paul O. Jensen have joined the research organization of the Freeport Sulphur Company. Both will work at the company's Grande Ecaille mine on the Mississippi Delta, where a plant for supplying nearly three million gallons of superheated water a day for melting sulphur underground was built on a seventy-five-foot piling above

marshland. Overturf recently married the former Doris Kathrin Wiseman of Etonville, Wash.

Al Barton, we understand, underwent an appendectomy but is doing well now. Wylie Kirkpatrick is taking the Civil Aeronautics Authority training course and is spending the rest of his time on a thesis and one of Professor Hauser's courses. From Crosby we learn that Hammesfahr breezed through a master's thesis in five weeks and also that Hagenbuch went to an Alpha Chi Sigma convention in California. Course X men are told to switch to rye, as ex-wrestling captain Bill Stone is now giving all for Calverts in Maryland. — Francis Sparks, IV, is working in Los Angeles for the Fluor Corporation, designers of industrial buildings and equipment. He is rooming with Robert Olwell, also IV, who is working for Hamilton Harwell Harris of the same city. — Helen Bunker had been working for Jerry Foster, an architect in Arlington, Mass., but in August she started to work for Marc Peter as secretary-draftsman. — William Lunt is the proud father of a baby girl. Congratulations, Bill, from all of us and best wishes for the baby, the first of Course IV if not the first of our Class.

Louis Russoniello is working on the Scranton housing project. It is a \$1,250,000 project and will accommodate 240 families. Louis is spending most of his time in working out the plan for the Community Building, which combines the boiler room and other service rooms with the meeting rooms and clubrooms. In his spare time Louis paints and does clay modeling with a summer attic group. He has recently been very active in a kermis, or fair, given in Scranton for the benefit of the Red Cross. He had charge of the signs, and before it was over was practically general all-round manager. — Jim Rumsey, Marshall Bearce, Dan Crosby, and your Secretary met at Dan's home one evening for dinner not so long ago. We exchanged news of Technology and, in general, had a great time recalling our last year at school. — Your Secretary has accepted a job with Dravo Corporation and will be located at Newport News henceforth. — H. GARRETT WRIGHT, *General Secretary*, 324 57th Street, Newport News, Va. DAVID T. MORGANTHALER, *Assistant Secretary*, M.I.T. Graduate House, Cambridge, Mass.

THE REVIEW and the FUND

UNDER the recently adopted changes in the Constitution of the Alumni Association, Alumni renew their subscriptions to *The Technology Review* by contributing to the annual Alumni Fund. Payments of \$3.00 or more a year to the Fund credit the alumnus with the payment of annual dues to the Alumni Association and include his subscription to *The Technology Review*.

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The Review Editors



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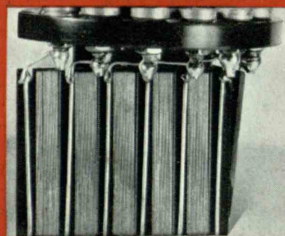
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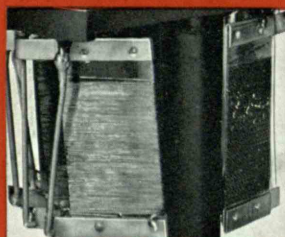
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